FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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Some Producers Raise Dicalcium Phosphate Prices

Increased tightness of dicalcium phosphate for feed use has developed in recent weeks, and prices have been advanced this week by some producers by 50¢ per unit of phosphorus.

Other manufacturers who have not announced advances as yet are reported not making forward bookings or booking new business.

Some trade sources believe that this action presages a general price advance in this product.

A basic cause of the advance, some industry spokesmen say, is a lack of profit in feed grade dicalcium phosphate at the old price levels. Competitive conditions brought about a price decline some months ago and have held prices at an unprofitable level since that time. Consumption of dicalcium phosphate in the feed industry has continued to mount steadily under these conditions, but some producers have reached a decision to ad-

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TIE VOTE ON FARM BILL FORESEEN

WASHINGTON — A responsible Senate leader has made a personal appraisal of the probable voting on the farm bill which goes on the Senate floor for debate Feb. 20. He now figures a 47-47 tie with two votes uncertain and one vote against high supports in the balance because a Senator is ill. In the event of a tie, the vice president would vote against the high supports.

Farmers Indicate 3% Hike in Chick Buying; Trade Sees Larger Increase

WASHINGTON—Farmers plan to buy 3% more chicks this year than in 1955. This is indicated in a U.S. Department of Agriculture survey of farmers' February intentions.

However, most industry experts are looking for a larger increase than is indicated in the report this week on farmers' intentions. Also, USDA acknowledges that some difference between farmers' February plans and actual purchases is to be expected.

Previous predictions of an increase in the raising of chicks for laying flock replacement have ranged all the way from 5% up to close to 15%. However, a number of experts figure that the increase will be in the neighborhood of 7 to 10% above the 1955 low of 524 million young chickens raised on farms.

Unfavorable egg prices and egg-feed price relationships preceding the 1955 hatching season resulted in a drop last year in raising of chickens on farms. Now, the more favorable price situation of past months is expected to bring an increase this year in purchases of baby chicks for egg production or growing on farms.

The recent hatchery report (see story on page 7) and reports from the field indicate that there are a lot of chicks being sold this season for egg production.

While farmers' purchases of baby chicks are expected to be up more than 3% this year, the increase may not be as large as some persons have expected. One expert points out that one reason for this is that farmers each year are becoming more alert to economic trends and situations and are coming closer to commercial operations. As a result fluctuations in production are not expected to be so large as in past years. Production will not react so strongly to specific price trends at the time of chick purchases, for example, and will tend to become more steady.

Also, with broiler production continuing to gain, the increase in chicks raised on farms is not likely to be so large as might otherwise be expected.

However, it is apparent that chick starter business this year will be up from a year ago by a fair amount.

According to the report on farmers' intentions to buy baby chicks, a 1% decrease is planned in New England, the mountain states and the Pacific Coast states. These decreases are more than offset by increases planned in other areas. USDA said planned increases are 12% in the east south central region, 11% in the west south central states, 8% in the south Atlantic region, 3 % in the west north central states and 1% in the middle Atlantic states. There was no change in the east north central states. (See table on page 95.)

Farmers reported that 52% of their baby chicks purchased last year were straight run chicks, 42% pullet chicks and 6% cockerels. This year they plan to buy 52% straight run chicks, 43% pullet chicks and 5% cockerel chicks.

USDA Economists Take Dim View of Hog Market Outlook

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—On the basis of the reported 55 million head of hogs on farms Jan. 1 (approximately 4.6 million more than a year earlier), economists at the U.S. Department of Agriculture take a dim view of the hog-pork marketing outlook for the coming year.

(See story below on livestock and poultry inventory.)

Officials sense another price decline late in 1956, but they hope that the price will not fall as deeply as it did last fall.

Actually, officials' apprehension is based on something more than the statistical report of hogs on farms. They note that consumer expenditures for pork have been dropping steadily in recent years, and for 1955, the expenditures fell to the lowest point in more than 10 years.

As far as the statistics go, the USDA report shows that hogs and pigs on farms Jan. 1, at 55 million head, were up 9% from a year earlier. The higher inventory reflected the increased 1955 pig crop. Market hogs (excluding sows) over six months old on Jan. 1 were 10% larger than a year ago, and hogs under six months were up 12%.

Sows and gilts at 8.9 million head were down 2%, in line with farmers'

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Poultry Numbers Off Slightly

Livestock Inventory Up 2% on Jan. 1

WASHINGTON—The nation's livestock and poultry—like the items in a feed store—are subject to an annual inventory, and this week the U.S. Department of Agriculture came out with its report on animal and poultry numbers as of Jan. 1.

The report shows that livestock and poultry on farms and ranches showed a net increase of 2% during 1955. The aggregate increase resulted from a substantial increase in hog numbers and a small increase in cattle numbers. Sheep, horses and mules, chickens and turkeys were down from a year ago.

Combining the species on the basis of their economic importance reveals that livestock numbers increased 2%, while poultry decreased 2%. Meat animals (cattle, hogs and sheep) were up 2%, while workstock was down 8%. Milk cattle (milk cows, heifers and calves) showed a decrease of 1%.

Production Rates High

Production rates in 1955 continued at record or near record levels, USDA noted. For example, record highs were attained for the number of pigs saved per litter, lambs saved per breeding ewe, milk production per cow, and eggs per layer. Preliminary indications are that the 1955 calf crop was at a record high. The pig crop was the largest since 1951.

Cattle feeding activity started out on a high level in 1955 and was high throughout the year. However, declining fed cattle prices checked feeding activity toward the end of the year, resulting in a cutback in feedlot replacements the last quarter of 1955.

Commercial broiler output rose 3% in 1955; heavy breed turkey production was about the same as in 1954, while light breed output dropped 15%.

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Animal Health Section

Following page 58 of this issue will be found a special eight-page section entitled, "Animal Health Products Merchandising Handbook for Feed Dealers." The section is the third of a weekly series of four devoted to promotional features designed to help the feed dealer increase health product sales. Theme of the series is: "Healthy Animals Use Feed More Efficiently." The section can be removed and preserved for future reference. The final handbook of the series will be part of Feedstuffs next week.

Honeggers' Mill in Indianola, Iowa, Destroyed by Fire

INDIANOLA, IOWA — The feed mill and elevator here which Honeggers' & Co., Inc., acquired when E. H. Felton & Co. merged its feed and grain operations with the Fairbury, Ill., firm Feb. 1, burned to the ground in the early morning hours Feb. 14.

Estimated loss of $175,000 is fully covered by insurance, according to William Fuhr, secretary-treasurer of Honeggers'.

The fire started in the elevator section of the mill from an undetermined cause and completely destroyed the mill proper. The office building located across the street from the mill was saved, however, along with all records and office equipment. It suf-

(Continued on page 8)

★ FEEDSTUFFS ★

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Where the Spread Is

IN all of the flood of written and spoken words on the subject of the cost-price squeeze on the farmer, it is rare that a major share of the blame is placed where it should be—on the sharp increases that have occurred in taxes and in wages. The politicians will go to almost any length to avoid such references. The impact of increased taxes would reflect their own prodigal spending. Whether he is an alderman, a congressman or a governor, the politico in office would prefer to have his constituents think that what he appropriates has no connection with what must be collected from the citizens to pay for it. And it is surprising how many citizens apparently are deceived, or at least believe that someone else will pay instead of them.

Similarly, most office holders or even candidates are fearful enough of vote losses to avoid, if possible, realistic discussion of the fact that advancing wage rates must be paid largely if not wholly by higher prices to the consumer.

The much-maligned "middleman" usually is made the whipping boy when a discussion of price spreads becomes necessary. Common sense would indicate that if any middleman, in any line of business, made enough profit to absorb the increasing costs forced upon him by extravagant government agencies and ever increasing wage rates, his field would soon be overrun with alert competitors trying to get in on a good thing. Those who may not have enough common sense to recognize it could soon find out the truth by becoming middlemen themselves. It probably is revealing of their private convictions that they rarely try it.

Our point is that the dominant influence on price spreads of these two factors—taxes and wages—is seldom mentioned by the new deal or "liberal" type of commentator or writer.

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IT is worth recording, consequently, that Paul S. Willis, president of the Grocery Manufacturers of America, recently catalogued these costs. It is an effective presentation and one that needs to be widely disseminated in this election year.

Mr. Willis says that the increase in spread between prices farmers get for their products and those consumers pay for goods at the grocery store results largely from higher wages, taxes and transportation costs. Increases in the latter, in turn, also are due largely to higher wages for transportation employees and higher taxes.

He blamed those three for "about 80% of the increase in spread since 1939."

In reply to charges that the drop in farm prices has not been reflected in retail food prices and that the increase in price spread results from profiteering and inefficiency by "middlemen," Mr. Willis said:

"Since 1952, the peak year of retail food prices, two thirds of the drop in raw farm food prices has been passed along to consumers in lower retail prices."

Mr. Willis contended that the average combined rate of net profits of grocery manufacturers and distributors has remained unchanged during that period.

Greater efficiency in processing and distribution helped cushion the increases in wages and other costs, he said.

Those combined net profits today amount to about 3¢ of every food dollar, compared with nearly 6¢ in 1939, Mr. Willis continued.

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USING the agriculture department's market basket of farm foods, Mr. Willis said that in 1952 farmers received $482 for the raw farm products going into the basket, while in 1955 they received $400.

In 1952, he said, consumers paid $1,035 for the basket and in 1955, $980. Thus the spread between the two prices increased by $27.

Mr. Willis said $19 of the increase went for higher wages and salaries for food processing and distributing employees; $3 for higher transportation costs and $9 for other higher business expenses, mostly taxes and wages.

A $4 reduction in federal income taxes was the only decrease, Mr. Willis said.

Here is the spread that ought to be of most concern to farmers. It is the sort of spread that is not peculiar to farmers. It concerns all industry.

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

Formula feed demand was in a between-seasons phase this week, and although buying of starter feeds for poultry and baby pigs was gaining, volume in most instances failed to offset declining purchases of some winter rations. Dairy feed buying fell off rather unexpectedly in the Northeast, and sales of hog feeds continued to lag in all areas. Prospects for growing demand for chick starter feeds remained bright, and government estimates of animal and poultry numbers, indicating 2% more on farms on Jan. 1 than a year ago, pointed to the potential large market. The government's report of intentions to raise 3% more chicks this year was below industry expectations. Feed ingredients were mostly steady to lower, and the index of wholesale feedstuffs prices dropped .7 point to 184.8. The feed grain index moved up .7 point to 186.7. (Ingredient details on pages 96-98.)

Northwest

Formula feed business was described as fair to good by most feed manufacturers in the Northwest, with sales of starter feeds continuing to expand and other types about holding their own. On the other hand, some manufacturers reported demand as slow.

In addition to chick starters, baby pig feeds are starting to move in quite good volume, in some instances in as good tonnage as usual for the season.

Meanwhile, dairy feed sales are spotty, with some manufacturers noting very good sales and others reporting depressed demand. Sales of laying feeds are steady.

Indications of stepped up starting feed buying are seen in the government's report of hatchery production of chicks and poults in January, released this week. In Minnesota production was up 10% from a year ago, and the number of eggs in incubators on Feb. 1 was almost double the number on the same date last year. The number of January hatchings was up sharply in Iowa, also.

Minnesota hatcheries produced 13% more turkey poults in January than in January, 1955.

The number of cattle on farms on Jan. 1 was at an all-time high in Minnesota, marking the seventh year that this figure has increased. The boost included a 2% increase in the number of milk cows. Hog numbers are a little higher than last year despite heavy October-December marketings.

Feed mill operations were generally on a five-day, two-shift basis at larger plants, with backlogs fairly good.

Southeast

If anything, feed business has slowed down from last week in the Southeast. Running time at the feed mills is holding about steady, but that little push which goes with good demand is lacking. Buyers are just not anxious to take any more feed than meets their barest minimum requirements.

To further confuse the picture, chick placements in the north Georgia broiler area continue to run from 30% to 50% more than for the same periods last year. However, feed mixers report business about the same or possibly slightly less than at the same time last year. When these high placements begin to consume feed on a larger scale, it seems that demand will have to show an increase in poultry feeds—and especially broiler rations.

Hog feeds are still especially dull, which, of course, is blamed on the poor prices for pork. Dairy feeds are steady, but nothing is indicated that it will get any better in the immediate future. All ingredient suppliers are complaining about slow demand, and nobody seems to be doing any volume business. Some of the feed trade believes that the February slump, which usually comes at this time, is here again and nothing will improve the feeding situation but time.

The weather has been open and mild for the most part this week, with some rain which has been confined to local areas.

From all indications, the southeastern feeder continues to utilize home-grown feeds wherever possible, and therefore purchases of commercial feed are held to a minimum. Areas where surplus feeds are produced are pressed to keep supplies moving, and prices have remained practically constant for some time on most all local feeds. The rains of last week slowed the corn movement slightly and caused a little tightness for a few days, but this situation has cleared up and now is unchanged from previous weeks.

Everybody looks forward to the spring pickup in feed, and in the Southeast, it will be most welcome.

Southwest

No upturn of any significance in feed sales was reported by manufacturers in the Southwest this week. Business mostly was steady, with increased chick and hog feed still counted on to bring an improvement in sales volume.

The appreciable increase in the January hatch over the previous year furnished justification for the belief that broiler and layer numbers would be fairly substantial this spring, but there is some concern that the numbers on feed might be over-expanded. Yet at the present time broiler prices hold to a rather favorable level of around 21¢ lb., and egg prices seem to be in a satisfactory position.

Hog feed business is improving in some instances, but the outlook still is uncertain. Cattle feed interest was moderate this week, with most shipments representing previous sales. Dairy feed sales were rather slow.

Protein costs dipped to lower levels or held to recent soft positions. Relatively easy protein prices have offset any firmness in carbohydrates, leaving feeding ratios in a favorable spot. Formula prices were mostly unchanged this week. Operations were on a four to five-day basis with little overtime anticipated.

Northeast

The demand for dairy feed is dropping off, and the decline took the trade by surprise because it usually doesn't begin to taper off until March. Ingredients used in dairy feed have already felt the lack of demand, and prices have eased.

Broiler prices have leveled off from the previous week's rise. There was no apparent break in prices, but the lack of demand points to easier markets, and the outlook is none too good.

Egg prices were irregular, varying according to sizes. Replacement demand for broilers is holding up fairly well, and chick starter feeds are undergoing their seasonal pick-up.

Egg mashes continued to lead in sales volume followed by broiler feeds.

Most feed ingredients declined during the week. A few advanced because of shortened supplies. Corn was about

(Continued on page 100)

Machinery Men Hear Talks

Iowa Feed Mill For Sale???

Our recently acquired feed mill at Indianola, Iowa, was completely destroyed by fire Feb. 14. We must either rebuild at Indianola . . . or locate another suitable mill very quickly.

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Machinery Men Hear Talks By Members of Trade Press

By HENRY S. FRENCH
Feedstuffs Editorial Staff

CHICAGO — A somewhat unique feature—a trade press panel—comprised part of the program for the annual meeting of the Grain Processing Machinery Manufacturers Assn., held at the Edgewater Beach Hotel here Feb. 13-14.

At the request of the association, several members of the trade press sat in on what was termed an "idea session" to help members of the organization do a better job of serving their respective industries. Panel members were given a time to discuss how the association can improve its advertising.

Serving on the panel were the following: Paul L. Dittemore, Feedstuffs, New York; Eldon H. Roesler, Feed Bag, Milwaukee; Richard Miller, Feeds Illustrated, Prospect Heights, Ill.; W. D. Flemming, Grain & Feed Review, Minneapolis, and Thomas Brinegar, Feed Age, Chicago.

Members of the association were lauded by the panel for their willingness to subject themselves to criticism and their apparent eagerness to do a better job. It was suggested the association generally should be more aware of new possibilities in developments in each company and within the organization. More informative advertisements also would give higher readership, it was believed.

Research Program

Mr. Dittemore suggested the association has a splendid opportunity to play a part in the progress of milling technology by setting up a research committee to work with the staff at Kansas State College's department of flour and feed milling industries. Most of the association members contributed machinery to help equip the new pilot feed mill, he noted, and a wealth of useful information from a well-planned and conducted research program might well be tied in with the Midwest Feed Production School.

Mr. Dittemore also told the delegates they should publicize the fact that machinery can, and often does, become obsolete a long, long time before it wears out. The job of bringing obsolescence to the attention of a miller is that of a sales engineer, he said, and should be done so by telling the potential buyer that he is offering a dividend-paying investment instead of trying to sell the idea of a capital expenditure.

While emphasizing that the feed industry comprises an important market, Mr. Dittemore said that sales are being lost because of inattention to other industries. The flour milling industry, for example, he pointed out, encompasses a sizeable number of flour milling plants that are candidates or prospects for a modernizing or rejuvenating operation to rid the mill of obsolete equipment.

During the annual business meeting, Walter C. Ronk, Barnard & Leas Manufacturing Co., Cedar Rapids, Iowa, was reelected president of the GPMMA, and R. R. Strong, Strong-Scott Mfg. Co., Minneapolis, was elected vice president.

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Four Promotions Announced by Nutrena Mills, Inc.

MINNEAPOLIS — Four management personnel moves in Nutrena Mills, Inc., were announced recently by E. C. Fuller, executive vice president, following Nutrena's general sales meeting held in St. Paul.

Dave Ross, presently vice president of the southeastern region, was named vice president and general sales manager, a position that has been unfilled since Mr. Fuller moved up to executive vice president. The appointment will move Mr. Ross from Memphis to Nutrena's Minneapolis office where he will assume his duties soon.

Mr. Ross was a partner and chairman of the board of Graham & Ross Mercantile Co. in Great Falls, Mont., when he joined the Cargill, Inc., organization in 1945, as merchandising manager of the country elevator division in Montana. In 1948 he moved to Minneapolis as manager of wholesale and retail feed operations in the country elevator division for Cargill and in 1950 was made administrative assistant to J. C. North in the Nutrena general office.

In 1951, following the Nutrena merger with Royal Staf-O-Life, Mr. Ross moved to Memphis as division manager. In 1954 he was appointed southeastern region vice president.

Moving to Memphis as southeastern regional manager is C. T. Whitworth, presently division manager of Nutrena's Wichita Falls (Texas) division. Mr. Whitworth joined Nutrena in 1936 as a trainee—later moved to warehouse manager and to a job as territory manager in Oklahoma.

After military service, he returned to do special sales work at Nutrena's Kansas City division and in 1947 became division manager at Nutrena's newly acquired Wichita Falls division.

Moving to Wichita Falls as division manager will be R. E. Whitworth, Jr., now division manager at Nutrena's Meridian (Miss.) division. He began with Nutrena as a sales trainee in 1949. Since then he has worked several years as a territory manager and held various sales positions in Nutrena. He was assistant manager for two years at the Kansas City division, and since 1954 has been division manager at Meridian.

Moving to Meridian as division manager will be Pat Shaw, now division sales manager of Nutrena's Coffeyville (Kansas) division. He joined Nutrena in 1946 as a territory manager and since 1950 has been assistant manager and division sales manager at the Coffeyville division.

K. C. Feed Club to Honor Past Presidents

KANSAS CITY — Seventeen past presidents of the Kansas City Feed Club will be honored at a dinner meeting of the club at the Hotel Phillips Feb. 21. While the club's existence dates back to 1939, all of the former officers continue to reside in Kansas City and all but three are actively participating in the feed business.

The presidents and the year they served are as follows: J. P. Parks, J. P. Parks Co., 1939 and 1951; Lewis Selders, of the former Spear Mills, 1940; Maurice Johnson, Staley Milling Co., 1941; Louis Flora, Commander-Larabee Milling Co., 1942; Tanner Stephenson, now with John J. Clay Sales Co., 1943; Ed Worth, L. C. Worth Commission Co., 1944; M. A. McClelland, M. A. McClelland Co., 1945; Curtis Kneale, representing Standard Milling Co., 1946; Earl Hogan, Earl A. Hogan Co., 1947; Loyd Selders, Pillsbury Mills, Inc., 1948; Martin E. Newell, Feedstuffs, 1949; Richard Myers, Rodney Milling Co., 1950; Joe Cooper, Staley Milling Co., 1952; Henry Meyerhoff, Fulton Bag & Cotton Mills, 1953; John Blowers, Standard Milling Co., 1954, and Bob Hollister, Cereal Byproducts Co., 1955.

Lloyd Case to Address Minneapolis Grain Men

MINNEAPOLIS—Lloyd Case, director of the grain division, Commodity Stabilization Service, Washington, will speak on politics, surpluses and the problems of disposal when he addresses the meeting of the Minneapolist Grain Shippers Assn. Feb. 21.

The group will meet at the Covered Wagon, with a cocktail hour starting at 5:30 p.m. to precede the dinner.

Purina Profits Show Decline

ST. LOUIS—Net profits of Ralston Purina Co., St. Louis, in the three months ended Dec. 31, 1955, amounted to $4,044,825, compared with $4,718,763 in the like period a year ago. Net sales for the quarter also declined from $100,067,186 last year to $89,045,910 this season.

"The first quarter of the year has been plagued with a continuing decline in our agricultural economy," Donald Danforth, president of the company said in his report to stockholders. "The results are reflected in our quarterly report."

"It is always hazardous to make predictions," Mr. Danforth added, "but we will be disappointed if the lossses in volume and profits are not fully made up by the time of our next report, which will reflect results of our operations for the first six months of our fiscal year."

Midwest Traffic Committee to Meet

KANSAS CITY—The Traffic Advisory Committee of the Midwest Feed Manufacturers Assn. will meet at the Muehlebach Hotel, Kansas City, Feb. 27 at 3 p.m., according to Owen Smith, Nutrena Mills, Inc., Kansas City, chairman of the committee.

Traffic men in the Midwest area are invited to attend.

Pending freight rate increases and other railroad tariff changes will be discussed.

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Poultry Nutrition Findings Reported At Southern Workers' Meeting

By Dr. J. R. Couch

Professor of Poultry Husbandry and Biochemistry and Nutrition
Texas A&M College

EDITOR'S NOTE: Reviewed in this story are papers on poultry nutrition research which were presented at poultry section sessions at the recent annual meeting of the Association of Southern Agricultural Workers. The writer, Dr. J. R. Couch of Texas A&M College, summarizes and interprets the reports and adds other comments and information. Covered here are results of new research on protein requirements for laying hens, use of poultry by-products in feed, energy, antibiotics for layers, turkey starter diets, feed efficiency in egg production and other subjects. In the animal husbandry section of the meeting, papers on animal nutrition research were presented, and these will be reviewed in a subsequent issue of Feedstuffs.

ATLANTA, GA.—The Poultry Section of the Association of Southern Agricultural Workers met at the Biltmore Hotel, Atlanta, February 6-8. This meeting was attended by representatives from state colleges or universities of the South and Southwest and by representatives from the allied industries from this area. Total attendance was approximately 125.

Subjects discussed included poultry diseases and sanitation, poultry housing, poultry management, the economics of broiler production and feeding and nutrition.

This report is concerned only with papers presented during the 2½ day session which covered subjects of broiler nutrition, feeding laying hens and turkey nutrition.

PROTEIN REQUIREMENTS—A paper on "Protein Requirements Under Various Laying Conditions" was presented by Dr. George Ingram, Alabama Polytechnic Institute, Auburn, Ala. Dr. Ingram stated that there were seven factors which were concerned in determining the protein requirement of laying hens. These factors were the temperature, the age of the bird, the system of management (caged layers versus floor layers), rate of lay, quality of protein in the diet, the form of the feed administered to the birds (pelleted, crumbles or mash), and the energy level of the formula.

Dr. Ingram reported upon three experiments. Fifty caged layers were used per group in the first study. The duration of the test was 6½ months. From the results of this test, it was concluded that caged layers require 17% protein and that best results were obtained only when the diet

Dr. J. R. Couch

contained from 17 to 19% protein. In the second test, it was summarized by Dr. Ingram that the level of 16% protein produced results which were practically identical with those obtained by feeding 18% protein in the diet with regard to egg production and feed efficiency.

It is of interest at this point to note that Dr. F. W. Hill of Cornell University presented data at the 1955 Cornell Nutrition Conference which indicated that the protein requirement of the laying hen was 16%. Data from Dr. Ingram's second experiment agreed with the results of Dr. Hill.

Dr. Ingram concluded in his presentation that 16% protein was adequate under most conditions, but he stated further that 17 to 18% protein was required by the laying hen for highest production and during periods of stress such as high temperature and with an energy level of 900 to 950 calories per pound.

It may be noted that Dr. Ingram's conclusions are almost identical with the work of Dr. J. H. Quisenberry during the past five years to the effect that light birds bred for high production require 17 to 18% protein for highest production, with a high energy type diet and particularly during periods of stress such as hot weather.

POULTRY BY-PRODUCTS—The second paper which was presented before this group and which certainly should be of interest to the feed industry was that of Dr. H. L. Fuller of the University of Georgia, Athens, Ga., and was entitled "Use of Poultry By-Products in Broiler Rations." Dr. Fuller reported on comparative tests whereby poultry by-product meal (poultry meat scraps or poultry offal meal), feather meal and poultry manure were compared with 5% fish meal in a standard broiler ration with a calorie content ranging from 870 to 1,002 calories per pound and with a calorie-protein ratio ranging from 39 to 41.

The poultry manure was prepared by taking poulter litter out of broiler houses after a batch of broilers had been finished which had been maintained on peanut hull litter. This poultry manure was autoclaved, dried, ground and mixed into feed. The duration of Dr. Fuller's tests was four weeks in some of the experiments and eight weeks in others.

From the results of the data presented, it was apparent that 5% poultry by-product meal could be substituted for fish meal as a source of unidentified growth factor activity in providing the "fish factor" in the growing broiler. Five per cent feather meal did not substitute as well for the fish meal as did the poultry by-product meal at the 5% level substituted directly. The dried poultry

(Continued on page 92)

15 Counties in Two States Added to Emergency Area

WASHINGTON—The U.S. Department of Agriculture has announced designation of 14 counties in Texas and a part of one county in Wyoming as disaster areas where eligible farmers and ranchers may participate in the emergency feed program.

These include:

Texas (14)—Coryell, Duval, Edwards, Fisher, Gillespie, Gonzales, Hamilton, Jones, Lampasas, Llano, Mason, Real, Taylor and Williamson.

Wyoming (1)—Lincoln County (part).

These designations bring to 209 the number of counties in 11 states to be so listed, as a result of drouth, hurricanes, floods or excessive early snowfall. These include: California, 8; Colorado, 7; Connecticut, 8; Kansas, 48; Nevada, 12; North Carolina, 10; Oregon, 7; Texas, 87; Utah, 8; Washington, 6, and Wyoming, 8.

Under provisions of the emergency feed program, eligible farmers and stockmen in designated areas may obtain certain feed grains and mixed feeds at a reduction in price of $1 per cwt. of grain. The program is designed to help stockmen in stricken areas to maintain basic livestock herds.

ARKANSAS TRANSACTION

MARIANNA, ARK.—The Marianna (Ark.) Feed & Supply Store has been purchased by W. W. Draper, Jr., and relocated in the Gordon Mathews Bldg. on West Main St. The store will be known as the Eastern Arkansas Seed Store.

Record Crowd Attends Poultry Industries Conference in K.C.

KANSAS CITY — Close to 3,000 representatives of the poultry industries attended the 27th annual Fact Finding Conference of the Institute of American Poultry Industries at the Municipal Auditorium here Feb. 10-12. It was a record high attendance for the event which featured speakers and round-table discussions on all major phases of poultry production and marketing.

Paul G. Gray, Jr., Estherville, Iowa, was reelected to a second term as chairman of the board of the IAPI and the directors named Dr. Cliff D. Carpenter president for the 12th successive year. Other officers elected were Ovid Youngblood, Waco, Texas, first vice chairman; Charles W. Frank, Sr., New Orleans, second vice chairman; Don K. Howe, Omaha, third vice chairman; W. F. Priebe, Jr., Chicago, secretary-treasurer; Charles W. Pratt, Chicago, assistant secretary-treasurer.

Members of the IAPI executive committee are William P. Ayres, Chicago; Herbert Beyers, Salt Lake City; Chester B. Franz, St. Louis; W. F. Leimert, Kansas City; W. B. Loucks, New York; Harold Williams, Chicago, and Ralph C. Calley (ex-officio).

In a discussion of extremely high current interest, Ernest Baughman of the Federal Reserve Bank of Chicago spoke on "Is the Vertical Operation Becoming a Necessity?" In the food industries, operating on a competitive basis and narrow margins, there has been a tendency to seek ways of strengthening competitive positions and improving operating margins.

Once a firm has achieved optimum size for an individual plant, Mr. Baughman said, it can then expand by extending its operations vertically (producing its raw materials or carrying the product through additional stages of processing or distribution) or horizontally (adding plants that perform the same functions). Acquisition of a going concern, or part of one, often brings the desired result faster and more cheaply than moves to build entirely new. Expansion, via mergers or other means, merely to increase size, should be avoided, he said.

Gains from Integration

In the poultry industries, greatest interest has centered on the possible gains from vertical integration, Mr. Baughman declared. There is some evidence that moves in this direction have a firm economic base. They reduce buying and/or selling costs. They also permit better scheduling of raw material supplies and, therefore, better utilization of processing facilities and better service to customers.

In view of its rapid growth, there is probably no credit shortage in the poultry industry. More likely, credit is available on terms which the industry deems unfavorable or undesirable. The problem, therefore, is to improve credit terms, not the availability of credit. Educational work with lenders may be useful. Also, a

(Continued on page 100)

VO-AG TEACHERS REQUEST FEED TECH BOOKLETS

KANSAS CITY—Vocational agriculture teachers are showing great interest in the booklet describing the feed technology program at Kansas State College, Lloyd Larson, executive vice president of the Midwest Feed Manufacturers Assn., reports. The Midwest organization has sent a copy of the booklet to all vocational agriculture teachers in the Midwest's eight-state area — about 4,500 copies in all. Early response has included requests for dozens of copies for distribution to students of these teachers, Mr. Larson said.

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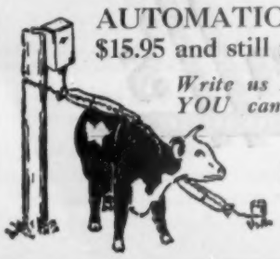

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Chick and Turkey Poult Production Shows Increase

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—The U.S. Department of Agriculture's hatchery report for January is another indication of the dynamic optimism of turkey and broiler producers—a condition which causes some USDA policy officials to toss restlessly in their beds at night.

The January report, on the surface, discloses indications of a dangerously large increase in output of heavy breed turkeys this year and a continued large increase in broiler production.

However, to accept without any analysis the hatchery production figures which appear frightening to some, is not good judgment, according to comments of other USDA officials.

The report shows a sharp increase in production of heavy breed turkey poults in January as compared with a year earlier. The hatch was up 58% from the January total last year. Furthermore, the number of heavy breed eggs in incubators on Feb. 1 was up sharply, indicating a large February hatch.

Broiler chick production in January was 38% larger than a year earlier, and production of chicks for other purposes was up 26%. Numbers of eggs in incubators on Feb. 1 also were up substantially.

Thus, in addition to the indication of continued large broiler production, there are early indications of a marked increase in production of chicks for laying flock replacement.

The data on chicks for flock replacement indicate an earlier hatch this year. Also, chick purchases last year were down substantially in the early part of the year because of poor egg prices. Actually, of course, early figures, ahead of the main hatching season, are not so significant as later figures.

Meanwhile, another report on farmers' intentions indicates only a slight increase this year in chickens raised for flock replacement. (See story on page 1.)

Turkey Situation

The "ice pack" for aching brows of top USDA brass in regard to the turkey situation is supplied by working level USDA officials who note some modifying conditions which are worthy of consideration in the turkey and feed industries.

They call attention to the shrinking production of light weight varieties—a decline which started last year and is continuing into this year. The light breed poult hatch in January was off 33% from a year earlier, and eggs in incubators on Feb. 1 were down substantially.

These reductions are seen as an important qualifying factor in the surface alarm which is apparent from first examination of the hatchery report for January.

Also, it is emphasized that last year the turkey industry marketed many heavy white breed birds as fryers, and this same condition is expected this year.

It is becoming increasingly evident, officials say, that the turkey industry has detected a pattern of production and marketing which does not freeze the producer to emphasis on heavy

(Continued on page 100)

Broiler and Non-Broiler Chicks Hatched by Commercial Hatcheries

During January (000's omitted)

State and division	Broiler chicks 1955	Broiler chicks 1956*	Non-broiler chicks 1955	Non-broiler chicks 1956*
Maine	2,206	2,841	336	456
N. H.	1,244	2,190	747	896
Vt.	7	21	28	35
Mass.	1,205	1,120	1,663	2,236
R. I.	98	260	52	60
Conn.	3,464	3,562	1,563	2,083
N. Eng.	7,224	9,994	4,439	5,766
N. Y.	420	950	1,850	1,500
N. J.	1,000	1,665	2,715	3,565
Pa.	2,430	3,764	2,786	2,839
M. Atl.	3,850	6,379	7,381	8,904
Ohio	1,400	2,100	1,400	1,800
Ind.	2,180	5,096	2,257	2,462
Ill.	625	1,264	1,225	1,467
Mich.	550	965	1,150	865
Wis.	685	1,020	75	280
E. N. C.	6,440	10,465	6,087	6,894
Minn.	145	186	400	420
Iowa	230	220	470	730
Mo.	2,401	4,771	476	778
N. D.	25	0	2	30
S. D.	0	0	10	30
Neb.	195	138	305	540
Kansas	221	75	319	625
W. N. C.	3,217	5,384	1,983	3,153
Del.	3,545	4,771	1	6
Md.	5,326	5,769	18	29
Va.	4,367	5,737	329	281
W. Va.	647	917	6	15
N. C.	5,182	7,342	555	858
S. C.	737	957	139	269
Georgia	12,308	16,307	745	1,351
Florida	1,187	1,847	713	1,153
S. Atl.	33,289	42,647	2,436	3,956
Ky.	750	1,000	150	250
Tenn.	1,270	1,691	477	423
Ala.	2,814	4,099	275	577
Miss.	3,138	3,774	112	164
E. S. C.	7,972	10,564	1,114	1,414
Ark.	4,746	6,572	106	199
La.	401	587	218	327
Okla.	550	630	430	370
Texas	5,502	7,276	1,898	2,813
W. S. C.	11,199	15,065	2,653	3,719
Mont.	12	10	38	45
Idaho	160	215	70	35
Colo.	61	15	199	215
N. Mex.	0	1	5	4
Ariz.	55	46	26	71
Utah	0	58	155	97
Mount.	288	345	493	467
Wash.	882	1,053	593	934
Oregon	536	979	518	577
Calif.	4,031	5,279	4,223	4,898
Pacific	5,449	7,311	5,633	6,459
U. S.	78,928	109,154	32,209	40,732

*Preliminary.

POULTS HATCHED AND EGGS IN INCUBATORS

(000's omitted)

Selected states	Poults hatched during January: Heavy breeds 1955	Heavy breeds 1956	Light breeds 1955	Light breeds 1956	Eggs in incubators Feb. 1: Heavy breeds 1955	Heavy breeds 1956	Light breeds 1955	Light breeds 1956
Michigan	3	5	6	5	125	221	15	6
Wisconsin	44	91	35	30	198	277	28	8
Minnesota	202	451	264	74	700	1,313	469	158
Iowa	52	93	11	9	739	1,083	35	54
Virginia	108	118	372	342	224	333	532	545
North Carolina	43	32	2	0	91	95	0	0
South Carolina	116	160	71	3	205	265	43	0
Texas	3	112	39	23	106	417	54	24
Washington	5	14	13	0	52	64	52	10
California	494	619	133	106	995	1,663	176	119
Other states*	106	193	377	294	851	1,387	488	243
United States	1,196	1,885	1,323	886	4,286	7,218	1,887	1,171

*Combined to avoid disclosing individual operations.

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Benson Opposes Truck Rate Boost

WASHINGTON — Ezra Taft Benson, secretary of agriculture, this week petitioned the Interstate Commerce Commission to suspend tariff provisions which have been filed by motor carriers for a 7% increase in truck rates and charges, with respect to agricultural commodities, farm supplies, fish and fishery products.

In his petition to the commission, the secretary restated his position of Feb. 2 in opposition to a similar rise in freight rates requested by the railroads. He declared that while the increases proposed in truck rates are by a different mode of transport "they are similarly undesirable in consideration of their effect upon the economic welfare of the American farmer which is presently a matter of grave national concern."

Mr. Benson urged the commission to suspend and defer the proposed truck increases pending a thorough investigation, and to require the carriers to assume the burden of proof necessary to justify the reasonableness and lawfulness of the proposed increases.

Movement of U.S. Flax To Canada at an End

WINNIPEG — The movement of U.S. flaxseed to country elevators at border points in western Canada is now at an end. It is estimated that as much as 200,000 bu. may have crossed into Canada.

With Canadian flaxseed prices averaging as much as 38¢ bu. over U.S. prices the flow of American flaxseed to Canadian shipping points got under way in late January. There were no quota restrictions and cars were available for the movement of flaxseed to eastern points.

The movement faded out when restrictions were placed on the use of cars for the movement of flaxseed Feb. 4. Even prior to this deterrent many elevator agents were refusing to accept U.S. flaxseed to keep from congesting elevator space to the detriment of local farmers who required the space for the delivery of their own grain. Canada's grading regulations appear to be a little tough on some of the lower quality flaxseed and this cut down the movement of lower grades.

At the close of operations Feb. 11 it was difficult to find a single elevator agent either with the Pools, United Grain Growers or the private trade prepared to accept flax from the U.S.

George A. Rouse Joins United Distributing Co.

MINNEAPOLIS—George A. Rouse became associated with the United Distributing Co., effective Feb. 15. He fills a newly created position, according to Mrs. Elizabeth McGaffey, president.

Mr. Rouse left an eight year association with Quaker Oats Co. of Chicago as a district sales supervisor in the feed division. A veteran of World War II, he joined Quaker Oats after teaching vocational agriculture in Iowa schools. He is a 1947 graduate of Iowa State College. He will make his home in Minneapolis.

George L. Gates

Roger Berglund

Appointments on Feedstuffs News Staff Announced

MINNEAPOLIS — New editorial staff appointments on Feedstuffs were announced this week by Harvey E. Yantis, president of The Miller Publishing Co. and editor of Feedstuffs. The announcement was made following the company's annual meeting in Minneapolis.

George L. Gates, who has been on the staff since 1947, was appointed managing editor. In his new position, he replaces Milton B. Kihlstrum, executive vice president and treasurer of the company, who will devote more time to administrative duties.

Roger Berglund, who joined Feedstuffs in 1949, was named assistant managing editor.

Emmet J. Hoffman, who has been an editorial assistant since 1952, was appointed merchandising editor of Feedstuffs. Thomas E. Letch, who joined the staff in 1955, is now assistant editor. Both formerly were newspaper editors.

Mr. Gates has been market editor of Feedstuffs for the past several years. Prior to joining Miller Publishing, he was with the Minneapolis Tribune and the Duluth (Minn.) News-Tribune. He is secretary of the Northwest Feed Manufacturers Assn.

Mr. Berglund has been an editorial assistant and news editor of Feedstuffs since joining the company. Previously he was employed by the Mankato (Minn.) Free Press and the United Press.

Mr. Gates, Mr. Berglund and Mr. Letch are graduates of the University of Minnesota, and Mr. Hoffman is a graduate of St. Thomas College, St. Paul.

Also at the company's annual meeting, Paul L. Dittemore, who was co-manager of the firm's eastern states branch office in New York along with George W. Potts, was appointed eastern advertising sales manager, and Mr. Potts was named New York office manager. Walter C. Smith is editorial assistant in New York.

Richard L. Ostlund was appointed office manager in the home office.

Mr. Dittemore was elected to the board of directors of The Miller Publishing Co. Other directors all re-elected, are Carroll K. Michener, editor of The Northwestern Miller and chairman of the board; Harvey E. Yantis, president; Milton B. Kihlstrum, executive vice president and treasurer; Martin E. Newell and Don E. Rogers, vice presidents, and Wilfred E. Lingren, secretary.

Range Feed Conditions Fair

FARGO, N.D.—Range feed conditions in 17 western states as of Feb. 1 were reported as averaging 71%, below the 1945-54 average for the area but up two points from a year earlier.

The report, from the Agricultural Marketing Service office in Fargo, also noted that cattle and calves have wintered in generally good condition, except in local areas, where short grazing and snow reduced feed supplies.

Supplemental feeding of cattle started early in the northern areas with heavier than usual feeding in many sections. This prolonged feeding has resulted in local hay and feed shortages and the depletion of field feeds. The late January and early February storms caused some shrink in cattle.

Sheep on western ranges have generally been maintained in good condition with about seasonal shrink.

The report noted that a number of areas had mild weather until late January storms, when more supplemental feeding became necessary. The storms gave moisture to start spring grass.

FIRE

(Continued from page 1)

fered only minor water damage and several cracked windows.

Firemen from four departments battled the wind-fanned blaze in the corrugated steel-covered frame mill structure.

Several thousand dollars worth of feed and equipment was saved when college students came to the aid of Elmer Roth, assistant general sales manager of Honeggers' who was in Indianola at the time of the fire. Students from nearby Simpson College assisted Mr. Roth in moving three boxcars loaded with feed and several trucks lined up for morning loading away from the burning mill.

In order to maintain service to its customers, Honeggers' dispatched a fleet of semi-trailers loaded with feed from Fairbury to Indianola within minutes after the blaze was reported by Mr. Roth.

E. F. Dickey, executive vice president and general manager of Honeggers' feed and milling division, said that warehouse space will be obtained in Indianola to store feed replacing that destroyed in the blaze.

Mr. Dickey said his company must either rebuild at Indianola or locate another mill soon. The company, he said, is determined service will be maintained in the area.

While the mill was still burning, 41 Warren County farmers boarded a bus at 5 a.m. as scheduled for a visit to the Honeggers' & Co. research farm, breeding hatchery and mill at Fairbury and Forrest. They were at the fire scene before leaving.

Elevators on the same site were destroyed by fire in 1936 and 1946.

Midwest Group to Hear Talk on Personnel

KANSAS CITY — Direction and handling of personnel have been getting increased attention in the feed industry recently, and one of the topics at the forthcoming Midwest Feed Manufacturers Assn. convention will be "Trends in Personnel." Discussing this subject will be Dr. Arthur Brayfield, head of the psychology department at Kansas State College, Manhattan.

Dr. Arthur Brayfield

The convention will be held Feb. 26-28 at the Hotel Muehlebach in Kansas City.

The theme of the convention is "Trends," and Dr. Brayfield's address will be one of several talks dealing with trends in various fields relating to the feed industry.

Also covered will be such topics as trends in agriculture, poultry, livestock, research, nutrition, feed control, medicated feeds and selling and merchandising.

OKLAHOMA GRAND OPENING

ENID, OKLA.—An open house was staged here recently to observe the completion of the new Consumers Cooperative Assn. feed mill. Larger quarters and new equipment are features of the new plant.

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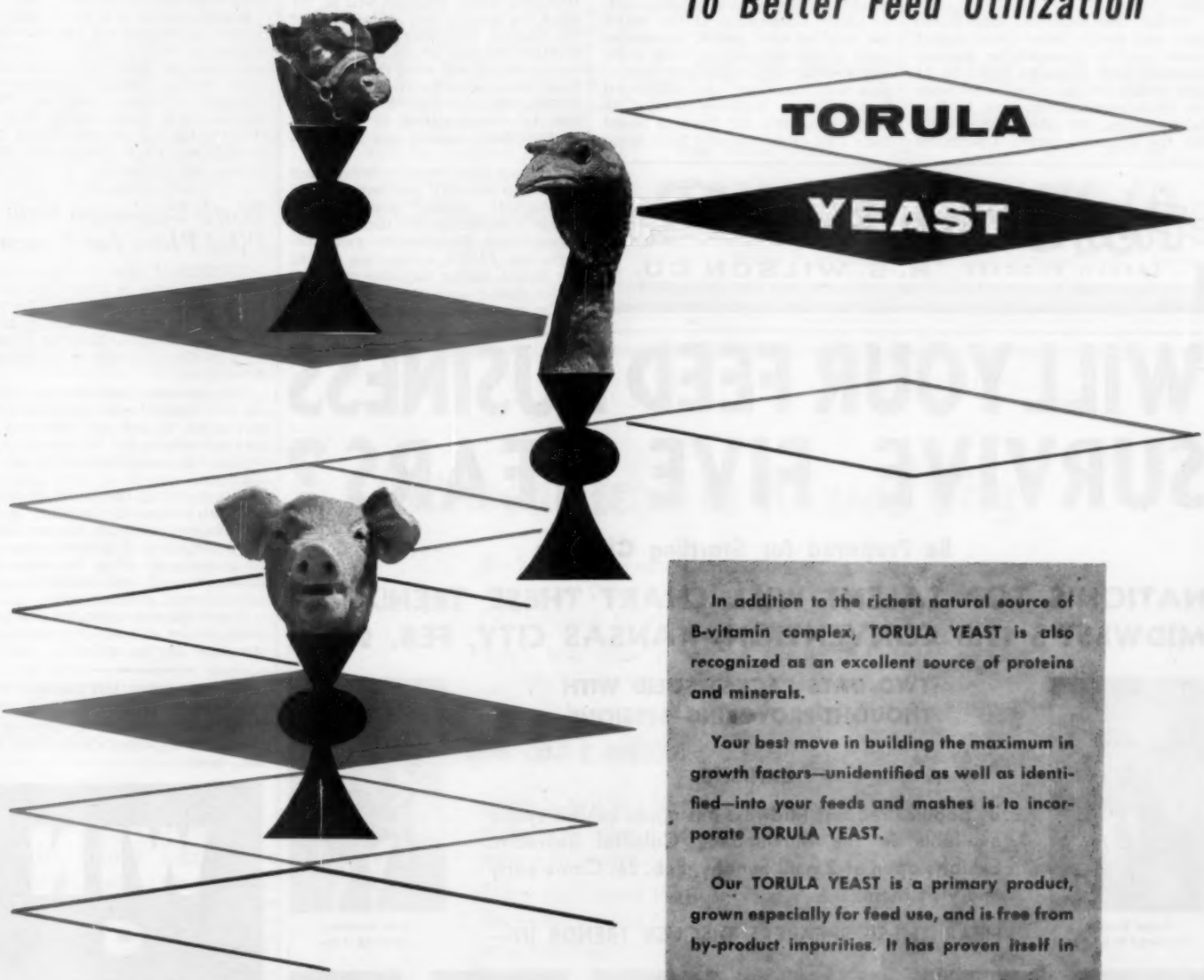

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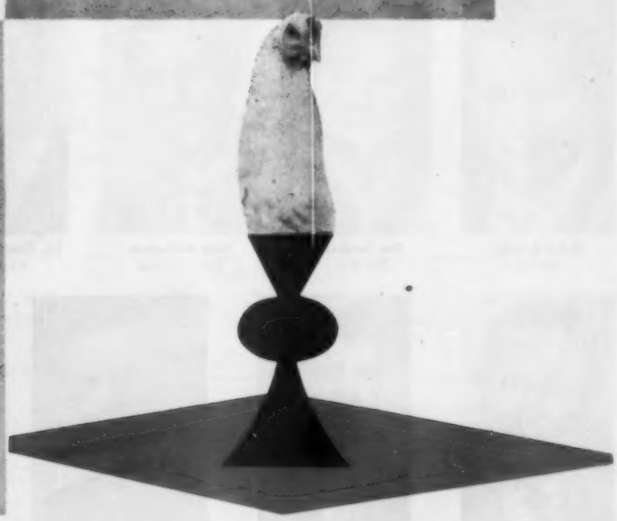

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Reseal Program for Price-Supported Wheat and Corn Announced by USDA

WASHINGTON — The U.S. Department of Agriculture Feb. 10 announced a reseal program in some states for farm-stored loans on 1955-crop corn and wheat under price support.

Under this program, farm-stored corn and wheat under price-support loans may be resealed for another program year. Farmers will also be able to convert purchase agreements on these commodities, now held in farm storage, into price-support loans for the extended period. Operations of the 1955-crop reseal program will be similar to those for previous crops.

Farmers who reseal their 1955-crops for the extended loan period will hold the grain on the farm instead of delivering it to the Commodity Credit Corporation at the end of the original loan period. Announcement of the program is being made now in order to give farmers time to plan and construct any additional farm storage facilities needed to make it possible for them to reseal their 1955 crops and still have space to handle their 1956 crops in an orderly fashion. To be eligible for the price-support loans, the commodities must be housed in satisfactory storage.

A storage payment in line with Uniform Grain Storage Agreement rates will be paid farmers who reseal their 1955 crops.

Eligibility requirements under the 1955-crop reseal program will be the same for quality and storage as for the regular 1955 loan operation. In addition, resealed wheat must be of a quality which will meet the Food and Drug Administration requirements to become effective July 1, 1956, relative to contamination of grain by birds, rodents, insects, and other vermin.

Farmers who desire to reseal their grain, or convert purchase agreements into "reseal" loans, should make application to their county Agricultural Stabilization and Conservation (ASC) committee during the month before the 1955-crop maturity date.

The reseal programs for corn and wheat will be available in the following states in areas where ASC State committees determine that there may be a storage problem and that conditions are such that good storable grain can safely be held on the farm for another year:

Corn—Loans will be extended to mature on demand but not later than July 31, 1957, in all states except in designated angcumois moth areas.

Wheat—Loans will be extended to mature on demand but not later than March 31, 1957, in Arizona, California, Colorado, Idaho, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, Wisconsin, and Wyoming.

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Work Begins on New Pilot Plant for Nopco

HARRISON, N.J. — Construction work has begun on a new pilot plant for the Nopco Chemical Co. The new building, to adjoin Nopco's main plant in Harrison, is being erected on a 10,000 sq. ft. site on the Passaic River front.

The structure will be the center for development work and pilot plant production of new and improved vitamin products for the dairy, pharmaceutical and livestock feed industries.

Incorporating the latest in architectural design, the building is being planned with an eye to maximum flexibility of interior space arrangements, to allow for future incorporation of new production and experimental research units.

Nopco officials expect the new pilot plant to be ready for occupancy sometime in the spring.

ACQUIRE INTEREST

JUNEAU, WIS.—Orville and Vic Seide have acquired an interest in the newly organized Carm Grain Co., Inc., here.

WILL YOUR FEED BUSINESS SURVIVE FIVE YEARS?

Be Prepared for Startling Changes

NATION'S TOP TALENT WILL CHART THESE TRENDS AT MIDWEST'S 12th CONVENTION, KANSAS CITY, FEB. 26-28

Oscar Straube
Challenge to Change

TWO DAYS PACKED SOLID WITH THOUGHT-PROVOKING SESSIONS

EXHIBITS

By popular request Midwest has made exhibit space available in the Muehlebach Colonial Ballroom. Exhibits open at 2 p.m. Sunday, Feb. 26. Come early and visit them.

John Westberg
Summing It Up

HEAR THESE SPEAKERS DISCUSS TRENDS IN—

Ralph Everett
Selling

Don Turnbull
Poultry

John Monaghan
Feed Control

Dr. Charles Kimball
Research

Ted L. Joule
Egg Sales

Jerry Sotola
Livestock

Dr. J. Russell Couch
Nutrition

Rex R. Bailey
Agriculture

Dr. Ernest Bechtel
Medicated Feeds

Frank Kouba
Advertising

Dr. A. E. Darlow
Education

PHONE OR WIRE
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KANSAS CITY, MISSOURI
Victor 2-3751

MIDWEST SPONSORS:
Feed Production School—Sales Workshops
for Feed Salesmen

WIN a Daffin

MOBILE FEED MILL

SEE **FEEDSTUFFS** FEB. 25 *for Rules and Entry Blank*

AT CONVENTION — This bright squaw dress made from a cotton bag fabric may cause "teepee talk" at the annual banquet of the Midwest Feed Manufacturers Assn. in Kansas City. A feedbag style show, "Fashion Trends in Summer Cottons," will be presented in the Hotel Muehlebach Ballroom Feb. 27. The dress (above) will be among the 40 fashions to be modeled in the show, which will feature garments from the 1956 loan wardrobes of the National Cotton Council, Memphis. The outfits will show feed manufacturers attending the Feb. 26-28 convention what a wonderful source of home sewing material cotton bags are and how the empty containers can lead a round-the-clock life with the farmer's wife.

John J. Field Elected President of Boston Grain, Flour Exchange

BOSTON—John J. Field of the A. S. MacDonald Commission Co. was elected president for the coming year of the Boston Grain & Flour Exchange at the annual meeting.

R. A. Richards of the Chas. M. Cox Co., was elected first vice president, and J. P. Brooks of the H. K. Webster Co., Richford, Vt., and Lawrence, Mass., was named second vice president, both one year terms.

Directors elected for three-year terms are John H. Lee, who heads a firm of the same name, and Charles J. Koelsch, who also heads a firm of the same name, both Boston houses. R. A. Gubbins, Unity Feeds, retiring president of the exchange, was also elected a director, as was L. O. O'Brien, manager of the Boston office of the Merrimac Farmers Exchange, Concord, N.H.

In attendance at the banquet were some 300 persons. The entertainment committee was made up of the following: John J. Field, chairman, John P. Brooks, Herbert F. Koelsch, R. N. MacDonald, Roland Koelsch, Paul Sutliff and L. A. O'Brien, Jr.

OPERATIONAL CHANGE

FORT ATKINSON, WIS. — The Carm Development Co. is now operating the former F. E. Green & Son Elevator here. Additional grain drying equipment is being installed.

Virginia Feed Broker, W. D. Saunders, Dies

RICHMOND, VA. — The senior partner of the Southern Brokerage Co., Richmond, Va., and the firm's founder, died recently. He was W. David Saunders.

Mr. Saunders, who was 77, was a former president of the Richmond (Va.) Grain Exchange and its secretary-treasurer for the past 10 years.

The Southern Brokerage Co. was founded by Mr. Saunders in 1908 and he continued actively in its management until shortly before his death. Continuing in a management capacity with the company is W. J. Melvin, Jr.

Enters Governor Race

ST. LOUIS — Joseph M. Whealen, 37, a division manager here for Ralston Purina Co., has announced that he is a candidate for the Republican nomination for governor of Missouri.

MINNEAPOLIS, MINNESOTA

By 1926 our type of Service demanded we get closer to Northwest Millfeeds, Linseed Meal and Screenings supply sources, so we opened a Feed Brokerage office here.

CALL

Marie Meyer Fred Dehning

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Phone FEderal 8-8421 Teletype MP 474

CEREAL BYPRODUCTS CO.

814 FLOUR EXCHANGE

Chicago Buffalo Minneapolis St. Louis Kansas City Omaha

All roads lead to Kansas City

We hope to see you at the big Midwest Feed Manufacturers' Association Convention at the Muehlebach Hotel in Kansas City February 27-28.

You'll hear some of the top men in their fields discuss "Trends" in the fast-moving feed industry.

But if you can't attend . . .

Hoffman-Taff will compile a transcript of all the talks made at the Convention. Each registrant at the Convention will receive a transcript.

If you can't attend the Convention, and would like a copy of the transcript, just fill out the coupon and we'll be happy to send you a copy.

Hoffman-Taff, Inc.
Box 1614 SSS
Springfield, Mo.

Please send me a copy of the transcript of the 1956 Convention of the Midwest Feed Manufacturers' Association.

Name_____
(Please Print)

Firm_____

Street Address_____

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Hoffman-Taff Inc.

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IRRADIATED DRY YEAST

RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

Use of Corn for Feed Up From Year Ago But Below Average

WASHINGTON — Increased feeding contributed to an increase in the disappearance of corn in the October-December quarter. This is shown in a recent U.S. Department of Agriculture summary of the corn supply, use and market situation.

Disappearance of corn as grain the first three months of the 1955-56 season totaled 829 million bushels, up 53 million from the same period last season but below the 1949-54 average for the quarter.

The amount of corn (grain only) used for feed the first quarter was 753 million bushels, or 38 million more than the total of 715 million bushels a year earlier. However, the amount was below the five-year average, 913 million bushels, for the period, and with the exception of last year was the smallest amount used for feed in the first quarter since 1937.

Exports in the first quarter also were up from a year earlier. The corn total, at 33 million bushels, was 14 million bushels higher than in the same period last season.

The use of corn for wet process milling the first quarter this season at 35.3 million bushels was about 655,000 bu. less than last year, but with this exception was the largest since 1946. The use of corn by the distilling industry amounted to 7.5 million bushels, compared with 6.1 million the first quarter in 1954.

Consumption of corn per animal unit was 4.3 bu. October-December, 1955, compared with 4.2 bu. for the same period in 1954. Grain-consuming animal units on farms this season are estimated at 175.1 million compared with 169.8 million last season.

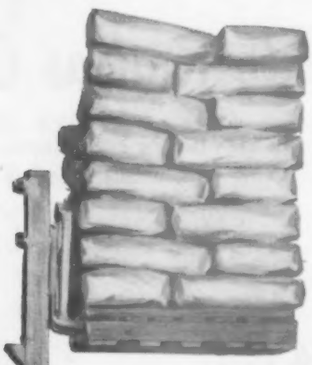
The quality of the corn crop is good, and the moisture content was low enough for safe storage. Harvesting losses were high because of the brittle stalks but much of the grain was salvaged by grazing. Disappearance of corn harvested as silage, forage, hogging and grazing was estimated at 328 million bushels for the entire 1955-56 season, compared with 330 million in 1954-55 and 316 million in 1953-54.

Stocks of corn in all positions on Jan. 1 were the largest of record and totaled 3,057 million bushels. This is 8% more than the 2,825 million bushels on Jan. 1, 1955, and 375 million more than two years ago. Of the current stocks, nearly 30% were under price support or owned by CCC.

Stocks of corn on farms at 2,191 million bushels were 5% more than the 2,093 million a year ago, and 133 million above average. Off-farm stocks were 18% larger than on Jan. 1, 1955. Stocks of corn in interior mills, elevators and warehouses totaled 212 million bushels, one third above the previous record of 156 million a year ago, and more than double two years ago. The Commodity Credit Corp. holdings in its own bins were at a record high of 583 million bushels and compare with 516 million a year ago. Terminal stocks, at 72 million bushels are 12 million more than on Jan. 1, 1955, and 29 million above two years earlier.

Corn prices received by farmers averaged $1.13 bu. the first quarter this season as against $1.40 for the same period a year earlier. Through Dec. 15 farmers placed 88.4 million bushels of 1955-crop corn under price support, compared with 19.5 million the same date a year ago.

What's coming in '56



to help you cut packaging costs?

New bag construction! New equipment! New engineering! 1956 promises plenty of cost-saving developments in multiwall bags. And you're sure to hear about them first from your St. Regis representative.

Reason: St. Regis has eight groups of specialists who are working to improve every phase of multiwall packaging right through to "in-plant" helps for you. They funnel this information to the St. Regis man in your area.

For instance, ask the Man from St. Regis about the new STRuctural STRip—the first real structural change in multiwall bags in 25 years. He will be glad to help you apply this and other time-saving, money-saving features to your business.

ST. REGIS for better packaging at lower cost

In 1955 the Man from St. Regis brought you these cost-saving developments

- Filtovent Bag
- Rayon Thread & Flat Tape
- Open-Mouth Filling Spout & Pneumatic Bag Clamps
- 135-AS Scale
- Literature Pouch Bag
- Semi-Rigid Container & Baling Equipment
- Fluopacker
- Stepped-end Bag
- Automatic Thread Cutter
- Settler-Conveyor
- Pasted Valve Bag for Fertilizer
- Palletizing & Printing Manuals

Ask the Man from St. Regis for particulars on any of these features.

MULTIWALL PACKAGING DIVISION
ST. REGIS PAPER COMPANY
230 PARK AVENUE NEW YORK 17, N.Y.

Cosby-Hodges Sales Force Attends Meeting

BIRMINGHAM, ALA. — The complete sales force of some 60 men from Alabama, Georgia, Florida and Mississippi heard about spring promotional plans for Jazz feeds at a Cosby-Hodges Milling Co. general sales meeting held at company headquarters here recently.

Earl P. Mitchell, general sales manager, was in charge of the program. He opened the event by riding in on a version of the jet-propelled "Super Chick" being featured by the company in its spring Jazz chick starter advertising campaign.

Other participants in the meeting were John P. Weeks, research and education director; James V. Peavy, general branch manager; John F. Yarbrough, public relations director, and W. Cosby Hodges, company president.

Mr. Mitchell called attention to the outstanding sales increases chalked up by the sales force during the first six months of the current fiscal year, and presented plans for further sales expansion in 1956.

Corn Allotments

1956 Commercial Area

State	—1956 Program— No. of com'l counties	Sum of preliminary county allotments (acres)	—1955 Program— No. of com'l counties	Sum of final county allotments (acres)
Ala.	4	227,926	8	0
Ark.	3	79,970	0	0
Del.	3	130,282	3	151,138
*Ill.	102	7,008,873	101	8,172,895
*Ind.	90	3,576,766	89	4,160,233
Iowa	99	8,201,379	99	9,636,420
*Kansas	23	1,076,860	22	1,274,559
*Ky.	49	1,032,806	48	1,145,429
*Md.	13	271,640	14	333,647
*Mich.	35	1,179,378	29	1,175,522
Minn.	58	4,058,157	58	4,738,582
*Mo.	71	2,814,884	69	3,281,548
Neb.	61	4,965,412	61	5,923,994
*N. J.	8	100,820	7	99,366
*N. C.	27	858,604	23	890,177
N. D.	1	84,725	1	96,478
Ohio	68	2,534,035	68	2,960,633
*Pa.	29	693,062	30	811,954
S. D.	32	2,319,492	32	2,726,309
*Tenn.	16	414,680	9	339,370
*Va.	10	147,059	9	171,886
W. Va.	2	18,901	2	21,935
Wis.	36	1,484,832	36	1,730,422
Total	840	43,280,543	805	49,842,697

*Acreages for 1955 and 1956 not comparable because of change in area.

MILL MODERNIZED

ONTARIO, WIS.—The Resch Feed Mill, Ontario, Wis., has been modernized with the installation of electric power. For 96 years the mill had been run under water power.

Make Your Customers
GOOD Customers... all year 'round

SUPREME Brand
Condensed BUTTERMILK

HERBERT K. CLOFINE, Inc.
MILK PRODUCTS
315 South Smedley St. Phila. 3, Pa.

Should your formula include TSB*

We should like to suggest another ingredient, TSB. A pinch of TSB may easily turn out to be the factor that makes your feed more profitable.

What is TSB?

It stands for Technical Service Bureau . . . *Nopco's* Technical Service Bureau which supervises the compatibility and method of manufacturing

NOPCO-PAK®

What is NOPCO-PAK?

Nopco-Pak is a vitamin supplement blended for you with Nopco know-how.

It is formulated to meet *your* specifications.

Nopco-Paks contain Nopco's unique Micratized® Vitamins A and D, which make possible delivery of full vitamin potency without costly overages.

They are packed in batch-sized bags to give you the utmost in ease of handling and space conservation in your warehouse.

Nopco's Technical Service Bureau staffed with trained nutritionists and chemists qualified to serve you. It has already developed a vast number of compatible formulas and is currently originating new ones and revising old ones at the rate of more than 1000 a year. This expert nutritional assistance is yours at no cost when you buy Nopco-Paks.

NOPCO

NOPCO CHEMICAL COMPANY
Harrison, N.J. and Richmond, Calif.

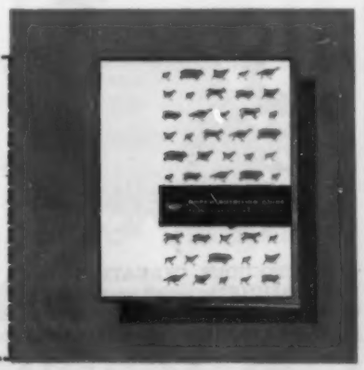
NOPCO CHEMICAL COMPANY
100 Front St., Harrison, N.J.

I want more information about TSB. Please send me the Nopco Nutrition Guide.

*Name*_____

*Address*_____

*City*_____ *Zone*_____ *State*_____



Basic producers of Micratized® Vitamins A & D, niacin, calcium pantothenate, choline chloride, and other products

CCC to Sell Commodities for Export on Credit

WASHINGTON—In line with intensified efforts to reduce government holdings of surplus agricultural commodities, Commodity Credit Corp. has initiated a program for sales to exporters on credit, it was announced by USDA last week.

Heretofore, except for barter transactions, CCC policy has been to sell for cash. Under the new credit sales program, agricultural commodities owned by CCC and tobacco pledged to CCC under price support programs will be offered for sale for export on credit extended by CCC for periods up to three years at rates of interest to be determined by CCC.

The per annum rates until further notice will be 3% for periods of credit up to six months, 3½% for periods from over six to 18 months and 4% for periods from over 18 to a maximum of 36 months.

Customary channels and facilities of trade and commerce will be utilized in carrying out the program. The sales terms will provide that the exporter furnish assurance of payment of the dollar sales value plus interest to CCC by a bank in the U.S. through the issuance of a letter of credit, or in another acceptable form.

Illinois Officers Elected

URBANA, ILL. — Coe Gaulrapp, Rock Falls, Ill., was recently elected president for 1956 of the Illinois State Turkey Growers Assn. Vice president of the organization for this year is Harold Kimpling, Claremont; secretary-treasurer, Gerald Bonnett, Havana, and National Turkey Federation director, Trevor L. Jones, Springfield.

Other directors elected include John Ammon, Jr., Winslow; Howard Kauffman, Waterman; Don McMillen, Verona; Dan Sinn, Tremont; Hubert Brown, Caledonia, and Shubel Burnet, Pana.

Manager Named for PENB Eastern Office

CHICAGO — Stephen K. Urner, field representative of the Poultry & Egg National Board in the East the past year, has been appointed manager of PENB's eastern office in New York City, it has been announced by Dr. James M. Gwin, PENB general manager.

The appointment was recommended by the advisory committee for the eastern office. Mr. Urner had served as acting manager since early November when C. Fred Smith resigned as manager to become a partner in a New York public relations firm.

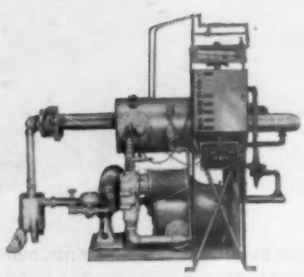
Before joining PENB a year ago, Mr. Urner had been connected for 20 years with the Urner-Barry Co., New York. His experience with this company provided a wide acquaintance with the processing, marketing and distribution of eggs in the U.S. He was sales manager for the company at the time he came with PENB.

Frank Catanzarite

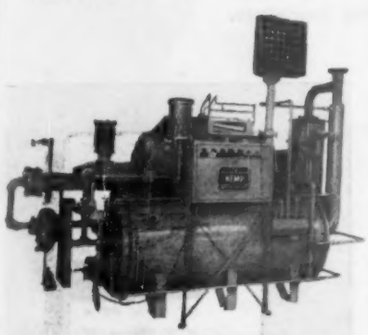
NAMED—The Buffalo Corn Exchange has named Frank Catanzarite of Indianapolis as executive secretary and traffic commissioner to succeed C. Jack Harriss, who resigned last December. The announcement was made by Elmer J. Koehnlein, manager of Allied Mills, Inc., and chairman of a Corn Exchange committee named to pick a successor to Mr. Harriss. Mr. Catanzarite has served as assistant traffic commissioner and assistant secretary of the Indianapolis Board of Trade. Mr. Harriss resigned from the Corn Exchange to join the Continental Grain Co. in New York as an assistant vice president and transportation coordinator.

More Alfalfa Producers Protect Quality with Kemp Inert Gas Generators than all Other Makes Combined!

Here's why:



SMALL PRODUCERS, this 1-MIHE is designed to supply enough inert gas to protect 2500 tons of alfalfa storage.



CONTINUOUS OPERATION . . . this 8-MIHE can work 'round the clock, depending on your needs. Protects up to 20,000 tons alfalfa. (One of 25 models.)

Kemp Generators offer alfalfa producers maximum quality control at minimum costs.

Positive Quality—Constant Analysis

Kemp Inert Gas Producers give you positive assurance of the finest protective atmosphere for excluding oxygen and minimizing deterioration of alfalfa quality. Complete burning of gaseous fuels like propane, natural and butane gases insures positive analysis. Built-in Kemp Carburetor utilizes special slide mechanism to maintain even flow of premixed and combustible fuel. These built-in safeguards guarantee positive quality, constant analysis!

Completely Automatic Operation

Kemp Inert Producers are completely automatic—give even combustion, uniform gas quality—require no operator to keep a constant vigil for fluctuating temperatures or uneven gaseous mixtures. Virtually *no maintenance* needed for years!

Model for Any Quantity Desired

Modern Kemp Inert Gas Generators (25 models) will supply enough inert gas to protect from 500 tons of alfalfa storage to 50,000 tons. Installation cost is low. Kemp engineers supervise installations.

Continuous Operations at Maximum Capacity

For years Kemp has led the field in inert gas producers. Industries like Petroleum, Paint, Steel, Copper all utilize Kemp Inert Gas Generators 'round the clock—24 hours a day to produce inerts for their specific needs, many like your own!

Send for FREE Information on Kemp Units

Get information on one or more of the world's most complete line of generator capacities . . . one of which can be the *most profitable* solution to your storage problem. Kemp engineers will be glad to discuss details and technical data with you; simply write, wire or phone: THE C. M. KEMP MFG. CO., 405 East Oliver St., Baltimore 2, Md.

KEMP OF BALTIMORE

INERT GAS GENERATORS

CARBURETORS
BURNERS • FIRE CHECKS
METAL MELTING UNITS
ADSORPTIVE DRYERS
SINGEING EQUIPMENT

King Midas Dealers Attend Feed Forum

MINNEAPOLIS—A feed forum for Occident and Tone feed dealers sponsored by King Midas Feed Mills was held Feb. 13-14 at the Curtis Hotel here with approximately 60 dealers from six midwestern states attending the fourth forum in the series.

Featured on the two-day forum was an explanation of the "50%-More-Profit" contest, which will send eight feed dealer winners on a Canadian fishing trip in June.

Discussions were held on the 100% livability promotion, custom mixing, training and the dealer costs of making feed. A three-act play about the feed industry written for the forum was one of the highlights of the meeting.

Eight teams of Occident and Tone dealers participated in a "quiz bowl" consisting of questions from the first day's meeting.

Arranging and appearing on the program were Frank T. Heffelfinger, II, Myron Carpenter, J. R. Lindell, John Pierson, Charles Wright, Robert Liset, Homer Munson, Keith Bucher, William Steinke and J. R. Adams.

Cedar Rapids Feed Club to Meet March 14

CEDAR RAPIDS, IOWA — March 14 has been set as the next meeting date of the Cedar Rapids Feed & Grain Club, according to Les Liabo, Iowa Milling Co., publicity chairman of the group.

"Beef Feeding" was the program topic of the Feb. 8 meeting held at the Roosevelt Hotel here. Speaker was Albert Guggedahl, manager editor of the Feed Institute, Des Moines.

Vitamin Antibiotic PRE-MIX

"PLUS" for swine, poultry, cattle. Also custom pre-mixes.

Carroll Swanson Sales Co.

630 Des Moines Bldg., Des Moines, Iowa

Distributors and Sales Agents Wanted Protected Territories.

chickens and that, in addition, it pro-

ease in chickens and turkeys; 3-nitro-

Recent Hammermill Shipments Show Acceptance of.. Jacobson QUALITY by Leading Feed Mills

All the hammermills pictured on this page have been shipped in the near past. We at Jacobson were particularly happy about them, because they were multiple orders destined for feed mills well-known throughout the industry.

We are no less proud of Jacobson grinding equipment produced for our other customers, large and small, all over the country. While Jacobson hammermills vary in design and construction to meet specific grinding problems, they are all manufactured to meet the rigid standards of quality so familiar to Jacobson users.

Our customers, therefore, are assured of dependable operation, low maintenance and power costs, and quality grinding, all of which are reflected on the profit side of the ledger.

COSBY-HODGES MILLING CO.
BIRMINGHAM, ALABAMA

One #144 Speedy Grinder, Two #8 Universal Hammermills, Two #6 Universals, and One #4 Universal. Total of 410 H.P.

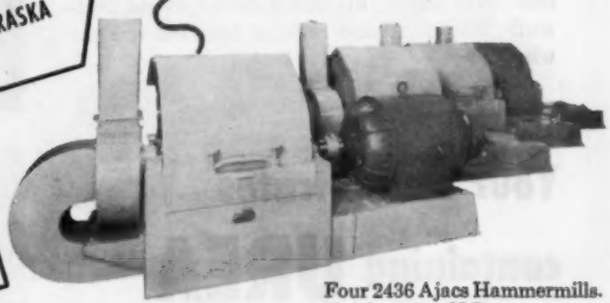
GENERAL MILLS, INC.
TOLEDO, OHIO

Three #17 Ajacs Hammermills Total of 45 H.P.

V. C. BRITTON CO.
FIREBAUGH, CALIFORNIA

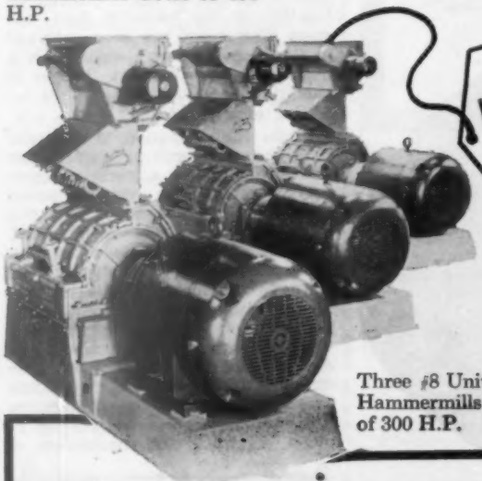
Two #2424 Ajacs Hammermills and One #10 Universal Hammermill. Total of 450 H.P.

MORRISON & QUIRK
HASTINGS, NEBRASKA



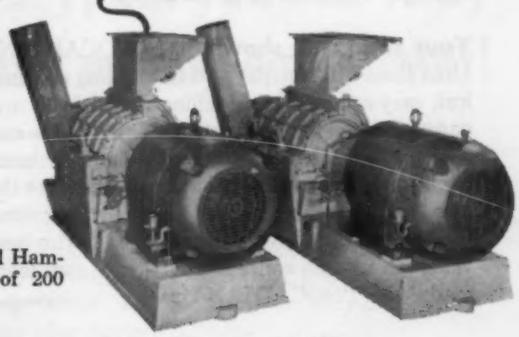
Four 2436 Ajacs Hammermills. Total of 600 H.P.

KELLOGG COMPANY
BATTLE CREEK, MICHIGAN



Three #8 Universal Hammermills Total of 300 H.P.

COOPERATIVE MILLS
SEAFORD, DELAWARE



Two #8 Universal Hammermills. Total of 200 H.P.

Other Recipients of Recent Jacobson Multiple Shipments:

AUBREY FEED MILLS
Louisville, Ky.

WENDLAND GRAIN CO.
Wendland, Texas

FARMERS UNION GRAIN TERMINAL ASSOCIATION
St. Paul, Minn.

ILLINOIS FARM SUPPLY CO.
Springfield, Ill.

NUTRENA MILLS, INC.
Peoria, Ill.

H. C. KNOKE CO.
Chicago, Ill.

FEEDSTUFFS PROCESSING CO., San Francisco, Calif.

RURAL CO-OP DRYING ASSOCIATION
Bird Island, Minn.

Your Jacobson Sales Engineer will be glad to tell you about Jacobson grinding equipment, and provide you with engineering and plant layout help.

Over 46 Years of Continuous Service to the Feed Industry

JACOBSON MACHINE WORKS
Manufacturers of UNIVERSAL, AJACS and MASTER Hammermills
1090 TENTH AVENUE S. E.—DEPT. M
MINNEAPOLIS 14, MINNESOTA

The Present Status of Arsonic Acids in Feed Manufacturing

By Dr. Neal F. Morehouse

EDITOR'S NOTE: Arsonic acids have found increasing use in feeds in recent years, and the accompanying article provides a review of developments in the use of these additives. The article is condensed from a paper presented by Dr. Neal F. Morehouse of Dr. Salsbury's Laboratories, Charles City, Iowa, at the Texas Nutrition Conference. Included along with other information and comments is some new data from recent field trials with layers.

Arsonic acids are of more than casual interest to feed manufacturers today because of their widespread use and increasing importance as feed additives. While certain members of this valuable class of compounds have been used for many years to treat specific venereal and tropical diseases of man, arsonic acids have been used in the feed of poultry and livestock for less than a dozen years. Yet, it is estimated that the use of arsonic acids has expanded until more than half of all broiler and chick starter feeds now contain an arsonic acid. Arsonic acids are also to be found in a rather large proportion of turkey and livestock feeds.

It was reported in 1946 (Morehouse and Mayfield, J. Parasitol. 32, 20, 1946) that 3-nitro-4-hydroxyphenylarsonic acid possessed medicinal properties against cecal coccidiosis in chickens and that, in addition, it produced a marked influence on the growth of chicks. While the initial report emphasized the coccidiostatic properties of this arsonic acid, it was the growth-stimulating properties which especially caught the interest of various investigators. Numerous experiments have since been conducted on the effect of various other arsonic acids on the growth of chickens, turkeys, swine, sheep and cattle.

Four arsonic acids are now being used on a commercial basis in poultry and livestock feeds. These are: (1) 3-nitro-4-hydroxyphenylarsonic acid, (2) 4-aminophenylarsonic acid and its sodium salt (also called arsanilic acid and sodium arsanilate), (3) 4-nitrophenylarsonic acid, and (4) arsenosobenzene.

The compounds 3-nitro-4-hydroxyphenylarsonic acid and arsenosobenzene are proven coccidiostatic agents against certain species of Eimeria in chickens; 4-nitrophenylarsonic acid is prophylactic against blackhead disease in chickens and turkeys; 3-nitro-4-hydroxyphenylarsonic acid and 4-aminophenylarsonic acid as well as its salt, sodium arsanilate, are therapeutic against swine enteritis, and 3-nitro-4-hydroxyphenylarsonic acid, 4-aminophenylarsonic acid and 4-nitrophenylarsonic acid are recommended for growth-stimulating purposes.

Feeds containing these arsonic acids were once considered to be "new drugs" under the Federal Food, Drug and Cosmetic Act. However, all such feeds are now exempted from the new drug provisions under the antibiotic section of the law, provided that the feed contains a certifiable antibiotic; that the arsonic acid is included in the feed within allowable concentration limits, and that adequate directions for proper use of the feed are given. This information is summarized in Table 1.

Interrelationship

The interrelationship of arsonic acids and antibiotics is of considerable interest to feed manufacturers. It has become a common practice to include one or more antibiotics plus an arsonic acid in the same feed. Justification for this practice lies not only in successful field experience but also in controlled experiments which have shown that antibiotics and arsonic acids supplement each other in their growth-stimulating activity. (Bird, et al, J. Nutrition 37, 215, 1949; Combs and Laurent, Univ. Md. Agr. Exp. Sta., Misc. Publ. 151, 1953; Combs, Romoser and Bishop, J. Nutrition 53, 511, 1954; Moore, Proc. Ohio Animal Nutr. Conf., Nov. 11-12, 1953). A similar additive response to arsonic acids and antibiotics fed simultaneously to swine has been shown. The desirability of using both antibiotics and an arsonic acid in pigs suffering from swine dysentery was shown by Carpenter and Larson (J. Animal Science 11, 282, 1952).

The fact that antibiotics and arsonic acids do supplement each other gives rise to some interesting speculation regarding the mechanism whereby growth stimulation is accomplished. Since antibiotics are believed to exert their influence on growth, in part at least, through alteration of the bacterial flora, the same mechanism has been proposed in the case of arsonic acids. It has, indeed, been shown that changes in bacterial flora do occur in birds receiving arsonic acids.

While the alteration of bacterial flora occurring both in arsonic acid- and antibiotic-fed animals indicates similarity of action, certain dissimilarities in their response to these two classes of substances have been noted. Evidence is available to show that, unlike the antibiotics penicillin and Aureomycin which spare the requirement of vitamin B_{12} and pantothenate, neither 3-nitro-4-hydroxyphenylarsonic acid nor sodium arsanilate lowered the demand of animals for these vitamins. It appears that much more investigational work is necessary before an adequate explanation can be given regarding the mechanism of

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Table 1—Table Showing Allowable Feed Concentration Limits of Arsonic Acids for Indicated Use

Arsonic acid	Allowable feed concentration limit (ppm)	Indications for use
4-Aminophenylarsonic and its sodium salt (arsanilic acid or sodium arsanilate)	50–100	Growth effect on poultry and swine Swine enteritis
Arsenosobenzene	20	Coccidiosis in chickens
3-Nitro-4-hydroxyphenylarsonic acid with N^a-acetyl-N^1-(4-nitrophenyl) sulfanilamide	25–75 90	Growth effect on poultry and swine Prevents coccidiosis Growth effect
4-Nitrophenylarsonic acid	250	Growth stimulation Prevention of blackhead

Table 2—Egg Production and Feed Requirement of Leghorn Hens Receiving 3-Nitro-4-hydroxyphenylarsonic Acid (New Jersey, 1953-1954)

Item—	3-Nitro, 0.005% in feed	No 3-Nitro	Difference (treated-control)
Number hens started Aug. 24, 1953	500	500	0
Number hens June 1, 1954	436	438	−2
Per cent left June 1, 1954	87.2	87.6	−0.4
Number eggs laid, total	89,335	83,362	5,973
Number eggs per hen housed	178.7	166.7	12.0
Per cent production (hen-day)	68.0	63.2	4.8
Pounds feed per dozen eggs	5.33	5.66	−0.33

Note—This is a record for nine months and eight days.

growth stimulation through the use of arsonic acids.

The use of arsonic acids for growing chickens is now a standard practice for many feed manufacturers, but their use in laying rations is not yet so well established. We now have a fair amount of research data to show that arsonic acids do have an important effect as feed additives in laying rations. (Wharton and Fritz, Poultry Sci. 32, 1014-20, 1953; Libby, Groschke, Evans and Bandemer, Mich. State College, Quar. Bull. 35, 419-27, 1953; Libby, Evans, Bandemer and Schaible, Poultry Sci. 34, 972-980, 1953; Carlson and Kohlmeyer, Poultry Sci. 33, 1047, 1954; Creech et al, Proc. Assn. Southern Agr. Workers 52, 161, 1955; Morehouse, Poultry Sci. 28, 375, 1949; Pepper et al, Poultry Sci. 33, 422, 1954.)

More recent studies, using 3-nitro-4-hydroxyphenylarsonic acid on layers under field conditions, confirm and extend our information on the response of layers. Three commercial poultry raisers in separate areas of the U.S. (Iowa, New Jersey and Texas) cooperated with us in this project during the 1953-54 laying year, and a fourth trial has been conducted by the New Jersey flock owner during the 1954-55 year. All hens used were White Leghorns except for Leghorn X Rock crossbreeds used in the Texas trial.

The pullets of each trial were divided by the owners into two groups of approximately equal numbers and placed in separate pens of the same laying house when they were transferred from the range. Medication with 3-nitro-4-hydroxyphenylarsonic acid was started at about the time the pullets reached full production, using a feed concentration of 50 ppm.

All birds were fed on commercial rations, the feed for these trials being produced by different companies. The birds of the Iowa trial received an all-mash ration, while those of the New Jersey and Texas trials were fed on mash-grain programs. Although normal culling was carried out on each farm, removal by death and culling was not considered excessive in any of the trials. Sale of the farm on which the Iowa flock was kept forced a termination of this trial at 5 months and 26 days, but the New Jersey and Texas trials were continued for a laying period of 12 months.

The 1953-54 New Jersey field trial was conducted on a strictly comparative basis during the first nine months and eight days of the experiment. The data for this period are summarized in Table 2. On June 1 the owner of this poultry farm found it necessary for practical reasons to consolidate his flocks by heavy culling and replacement of hens in both the treated pen and the control pen. Accordingly, he removed 75 hens from the treated group and 84 from the unmedicated pen. The owner then added 131 hens to the treated pen and 146 hens to the control pen, bringing the total number of hens to 492 and 500, respectively. The hens added were from the same hatch as those presently on the experiment, but they had been kept in other houses.

Heavy culling and addition of hens to these pens make it impossible to obtain a true value of the production of eggs per hen housed after June 1. Obviously the addition of hens presumably laying better than those that were culled would produce a spuriously high production figure when calculated on a hen-housed basis. With due consideration of this exchange of birds, the field experiment was continued into its second phase, giving a total observation period of 12 months. Table 3 summarizes data for the entire period.

If one treats the flock as though no hens were culled or added, on June 1 the egg production on a hen-housed basis was 231.7 for the treated group and 216.4 for the unmedicated lot, or a difference of 15.3 eggs per hen housed. However, the per cent production is not affected by the culling and addition of hens because per cent production is calculated on a hen-day basis, accounting for each day each hen was on test. Furthermore, the pounds of feed required per dozen eggs represents a true picture of the production of this flock under the conditions of the experiment.

No hens were added in the Iowa or Texas trials, so true values on eggs per hen housed could be calculated for the entire observation period of each trial.

(In the Iowa trial, covering 5 months and 26 days, data for the

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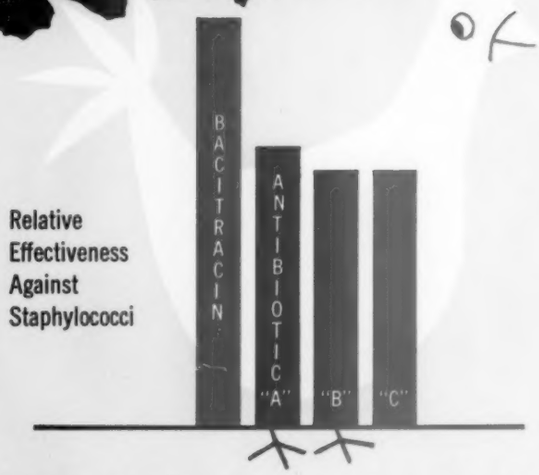

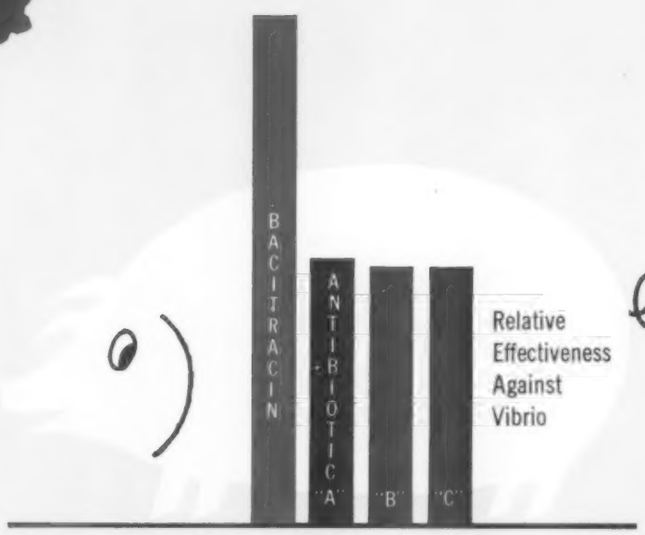

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(1) Graham, R., Boley, L. E., and Woods, G. T.: Bacitracin in Necrotic Enteritis of Swine. North Am. Vet. 31:736.

(2) Boley, L. E., Woods, G. T., Hatch, R. D., and Graham, R.: Studies on Porcine Enteritis. II Experimental Therapy with Sulfathalidine, Sulfamethazine, Sodium Arsanilate, and Bacitracin in a Natural Outbreak of Swine Dysentery. Cornell Vet. 41:231.

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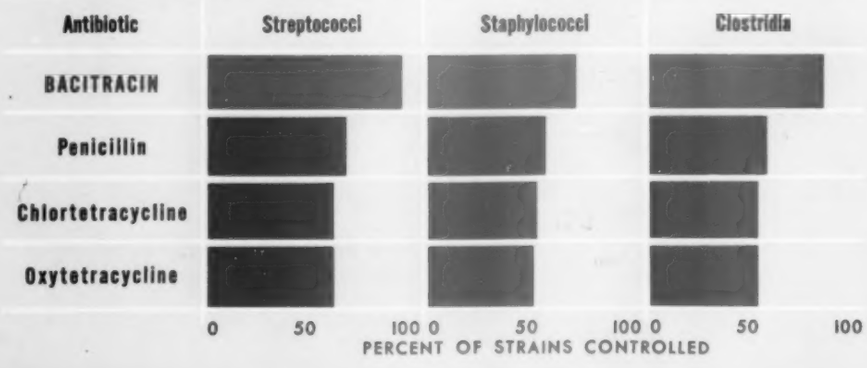

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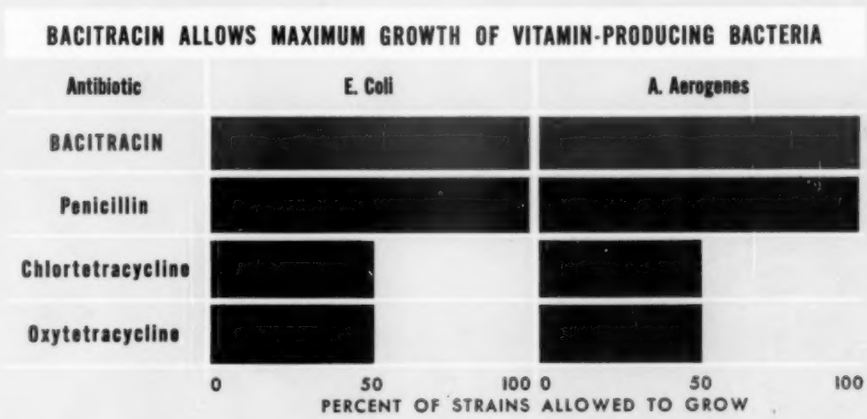

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Other Observations

Research on arsonic acids has not been confined to poultry. Limited observations on the response of ruminants to arsonic acids are not entirely conclusive, but are promising enough to provide stimulus to further investigation.

Another application of arsonic acids is their use in poultry and livestock diets which contain selenium. It had been shown by Moxon (Science 88, 81, 1938) that an inorganic arsenic compound, sodium arsenite, could protect rats against selenium toxicity. Carlson et al. (Poultry Sci. 33, 768, 1954) compared the value of 3-nitro-4-hydroxphenylarsonic acid, arsanilic acid and sodium arsenite on the growth of chicks receiving diets containing seleniferous corn (10 ppm. of selenium in the total diet.) It was found that the two arsonic acids acted like sodium arsenite in protecting against selenium poisoning but that the growth response was greater in the arsonic acid recipients than in birds receiving the sodium arsenite. A similar response of swine receiving seleniferous diets to these two arsonic acids has been observed by Wahlstrom et al. (J. Animal Sci. 14, 105-10, 1955.)

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Note—This is a record for 12 months.
*Based on 500 hens placed in each pen at the beginning of the year.

When mixing feeds with products containing arsonic acid, the feed manufacturer should observe certain rules. These products should be mixed at recommended levels; mixing equipment should be properly adjusted; and, in the case of batch mixing, sufficient time should be allowed to insure uniform mixing.

Overdosing by superimposing one arsenic-containing product on another should be avoided. It is recommended that control measures, either chemical analysis of mixed feed or a check of inventory depletion against the quantity of feed mixed, should be practiced not only for the protection of the customer but also for protection of the feed company as well. With reasonable control of dosage level and feed mixing, the feed manufacturer can insure himself, his dealers and their customers of the benefits to be derived from the use of arsonic acids.

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Overdosing by superimposing one arsenic-containing product on another should be avoided. It is recommended that control measures, either chemical analysis of mixed feed or a check of inventory depletion against the quantity of feed mixed, should be practiced not only for the protection of the customer but also for protection of the feed company as well. With reasonable control of dosage level and feed mixing, the feed manufacturer can insure himself, his dealers and their customers of the benefits to be derived from the use of arsonic acids.

TO MANAGE ELEVATOR

DODGE CENTER, MINN.—Dennis Albertson of Lamberton, Minn., will take over management of the Cargill, Inc., elevator here. He has been employed by the Farmers Elevator Co. in Lamberton since 1950.

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The two Butler Bulk-O-Matic feed tanks shown above are typical of the way feed dealers and manufacturers are using Butler tanks as sales tools to get big volume business — and cut costs at the same time. This installation is owned by feed dealer H. J. Schult & Son, Sumner, Iowa. Besides clinching sales by enabling this dealer to sell in bulk, the tanks permit larger, less frequent deliveries and better planning.

Get the details of how Butler bulk feed tanks can be used as an important part of a sales-building bulk feed program. Write the office nearest you.

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What's New in Feeding

Putting Feed Research to Work

Lead to Bloat Control Seen as Station Finds Penicillin Effective

● B. F. Barrentine; Mississippi Farm Research, Vol. 19, No. 1, January, 1956; published by Agricultural Experiment Station, State College, Miss.

An intensive study of the bloat problem has been under way for several years at the Mississippi station. As a result of these studies, attention was focused toward rumen micro-organisms as a possible factor in the cause of bloat. Therefore, it was decided to investigate various antibiotics as bloat preventives for cattle grazing ladino clover.

In order to study the effect of antibiotics on bloat prevention, yearling and two-year-old steers which had bloated regularly were allowed to graze ladino clover for a period of 90 minutes early in the morning and again for 90 minutes in the early afternoon. At the end of each grazing period, the steers were checked for bloat and put in a dry lot with shade and water but no feed. The author had observed that steers bloat more readily under this management system than when they were left on the clover all of the time.

The antibiotics tested were Aureomycin, Terramycin, bacitracin, streptomycin and penicillin. In all cases, the antibiotics were given orally by means of a capsule or drench.

In preliminary tests, 1 gram of antibiotic per animal was administered but it was found that this level of antibiotic caused severe diarrhea so lower levels were tested. Levels of 0.3 gram of the antibiotics did not generally cause the diarrhea.

Aureomycin, Terramycin, bacitracin and streptomycin at levels up to 0.3 gm. did not prevent bloat. However, penicillin was found to be highly effective at this level. Good protection from bloat was obtained with 0.025 gm. of penicillin, and 0.05 gm. of penicillin gave complete protection to yearling steers for a period of one to three days. Two-year-old steers were completely protected from bloat by 0.075 gm. of penicillin for a period of one to three days.

The penicillin was usually administered about noon. In almost every case, the treated steers bloated during the grazing period in the afternoon following treatment; however, the bloat was prevented the following one to three days. Penicillin given in the late afternoon was effective the following morning. Therefore, it appears that a period of several hours or overnight is required before penicillin is effective in preventing bloat.

To date no practical method has been found by the Mississippi investigators to administer the penicillin to grazing cattle. Various salt and feed mixtures containing penicillin are being tested.

COMMENTS:

These results of the Mississippi test demonstrate that penicillin is very effective in preventing frothy bloat caused by pasturing ladino clover. Whether it is equally effective in controlling other types of bloat remains to be seen. At any rate, penicillin seems to be worthy of concentrated investigation.

From the feed manufacturer's standpoint, the proper amount of penicillin could easily be incorporated into a cattle supplement. This would be a considerable service to the cattleman in two ways: (1) The prevention of bloat would allow the feeding of a greater amount of the highly nutritious legumes, and in turn an acre of land would be able to produce more beef and milk than if the legumes had to be diluted with less productive grasses. (2) The cattleman would be forced to supplement his cattle while on pasture. There is sufficient evidence to indicate that a properly formulated supplement will increase the utilization of forages and this would result in more efficient beef and milk production.

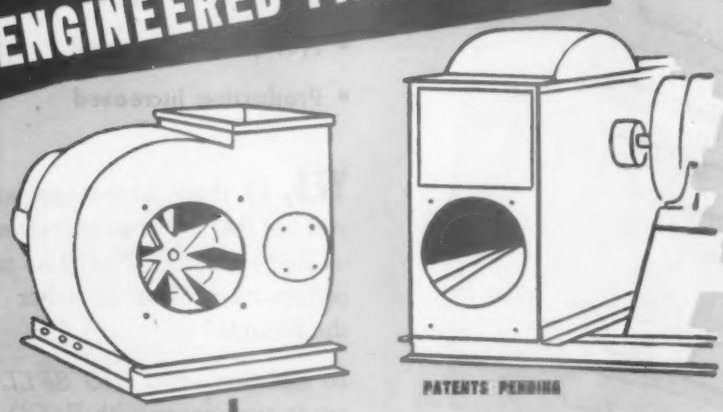
Most feed manufacturers would be more willing to add penicillin to cattle supplements, particularly beef cattle supplements, if they could be sure that penicillin would give a growth promoting effect similar to that obtained from Aureomycin and Terramycin when added to high roughage rations. The level of .075 gm. or 75 mg. of penicillin needed to prevent bloat in two-year-old steers is about the same as the level recommended for Aureomycin and Terramycin as growth promotants.

Central Soya Forms Communication Club

FT. WAYNE, IND.—Central Soya Co., Inc., has formed a Communication Club for all executive and administrative employees. Its purpose is to recognize the importance of communication in business activities, to develop its effectiveness and provide more opportunities for employees to practice all types of communications.

Commenting on the club's formation, H. W. McMillen, chairman of the board, said, "We feel that good communication is a most important factor in sound management. Properly used, it can strengthen human relations and improve every phase of a business enterprise. It is our hope that this club will form the nucleus for a company-wide improvement program in the art of communication."

CUSTOM ENGINEERED FAN POWER



PATENTS PENDING

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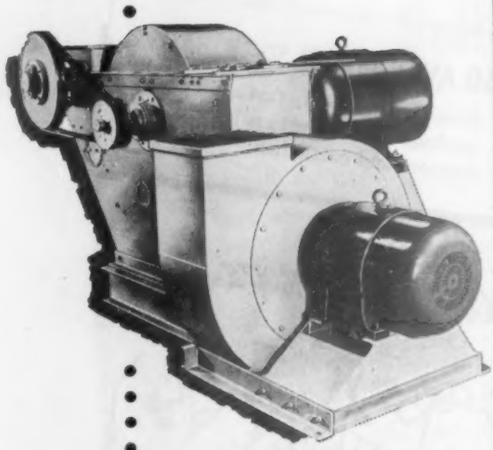

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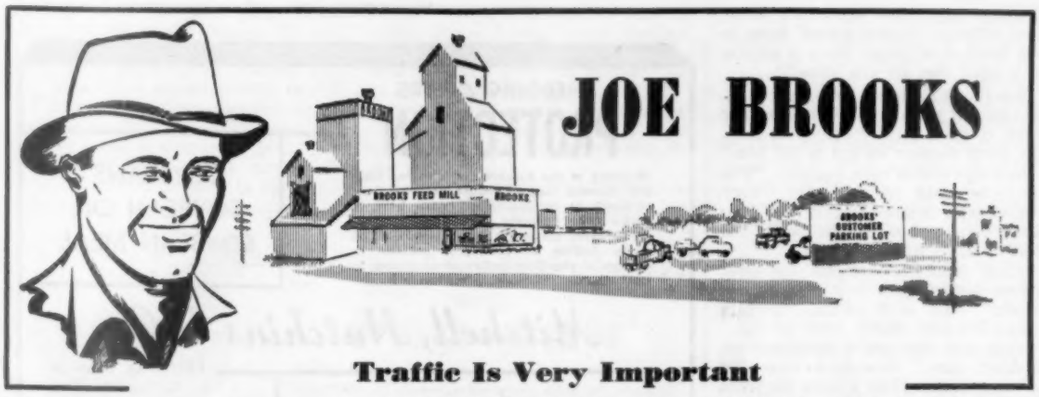

Traffic Is Very Important

Light snow was falling when Grandpa Hodgkins came to work at the feed store that morning. Grandpa was nigh unto 80 now, wore a hearing aid instead of an ear trumpet, and he was Joe Brooks' one dollar a year man, and seventh assistant vice president in charge of public relations.

Joe had hired the old fellow about a year ago to put in one day a month at the feed store, welcoming oldtimers and ladies and generally being agreeable, for which Joe usually paid him $5 and a lunch at Happy's Diner. Joe figured this was cheaper for him to do, because Grandpa, when not on the payroll had had the unhappy-for-Joe faculty of winning a couple of contests Joe had sponsored.

But as one of the vice presidents Grandpa was now ineligible to participate in company contests. And he loved his one-day-a-month job, and looked forward to it. He dressed much neater, had his mustache and grey beard always trimmed and always stepped spryly around the store as if he were the owner instead of Joe. And the customers loved it, and secretly so did Joe. He admired Grandpa's fire and vinegar initiative.

Elmer Godluch, Grandpa's son-in-law, usually brought Grandpa down one day a month for his appointment with Joe's trade. Today, Grandpa strode in with his thick brown cane tapping the asphalt tile floor. Grandpa didn't even bother to take off his brown stormcoat and coonskin cap. He just walked around looking over the store.

He looked at the overhead fluorescent lighting, grunted and shook his head. Then he eyed a couple of up-front displays, and grunted some more and shook his head.

Pop Henley, who was 70, grinned and winked at Milt. "Grandpa has something on his mind this morning. Just look at him stompin' around."

Milt yawned. "I don't see where he gets all that fire!" he said enviously. "Of course, he gets to bed early nights, I suppose, which I don't."

"Huh," snorted Pop Henley. "If somebody would burn a certain book you have with telephone numbers in it, you would benefit, and so would Joe in having a more alert employee."

"Oh, Pop," reprimanded Milt, "how can you say such terrible things? You were young once, too—remember?"

Pop had no chance to make a hot remark which he had intended, because Grandpa had called to him. "Son, come here!"

Pop Henley bristled a little. "Who you talkin' to?"

"You!" snapped Grandpa authoritatively. "You're in charge of this dog food island, Henley. How do you expect us to sell more dog food when there are so many empty places there? For every blank space we may be losin' a sale."

Pop advanced toward Grandpa Hodgkins. "Careful how you talk to me," he snapped. "I'm 70. You're 80. That's only 10 years. Don't let it go to your head."

"Huh," growled Grandpa. "A man can grow a lot in 10 years, and think a lot, too. I'm still findin' out things. And I can see things aren't going too well around here. We're slipping. First thing you know some young feller'll come in and start a competitive feed store and run us outa business."

"Say, who do you think you are, Grandpa?" Pop asked, a little angrily. "An efficiency man from the Ford Foundation or somethin'?"

"I don't drive a car any more," cackled Grandpa. "I'm outa that class. I've got a chauffeur. Have you?"

Pop blinked. "No, I haven't. But it seems to me that sometimes when a

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man gets too old he sounds off when he should keep his mouth shut."

Now it was Grandpa's turn to snap his head back and his blue eyes glinted and his grey bearded chin thrust out. A fight was brewing and Milt was gleeful. He wanted to see these two oldsters tee off. But at this moment Joe Brooks appeared at the door of the office.

"What's going on around here?" he asked. "You fellows are talking awful loud. And it doesn't sound too friendly."

"Oh, Grandpa got out of the wrong side of bed this morning," Pop Henley said angrily. "Or maybe he's got a touch of arthritis or rheumatism. He's findin' fault with everythin' includin' our feed store. Says we may be goin' out of business."

Joe's face fell a little at this remark. Actually he thought he had a pretty up-to-date store and mill and this criticism of Grandpa's was a slight slap in the face.

"Well, Grandpa, I guess it's time you explain," he said a little severely.

"You durn right I'll explain," Grandpa said heatedly. "If I think somethin' I say it. I don't have to keep my mouth shut like these other fellers for fear o' losin' their jobs. I don't need to work. I got a Spanish War pension and a few dollars laid aside. I'm independent, I am."

"Okay," Joe said patiently, "but you still haven't told me what is wrong with this feed mill and store."

By this time the other employees had gathered around. There were Windy Kramer, Smiley Johnson, Butterball Barlow and even Rusty Hagen, the runty bookkeeper.

"There's plenty wrong," Grandpa said sharply. "I've just been to a county grocers' meetin' yesterday. My friend, Art Jones, the grocer, let me in when I said I was researchin'. I'm up-to-date, you see." He cast a critical look at Pop Henley, whose face got red.

Grandpa went on. "They had a speaker at that meetin' and he opened my eyes—just like Grandma used to lay a cold wet rag on my eyes when it was time to get up and milk the cows years ago. This speaker was tellin' the grocers how important it was to git traffic into their stores."

Store Traffic

"That's old stuff," Pop said. "Everyone knows that."

Grandpa coughed. "Take it easy, son. I ain't finished. This speaker said grocers had the lead in traffic now, and they should work hard to keep it. He said that a woman comes into a grocery store about three times a week, and they have three chances to sell her a lot of stuff. The same customer comes into a drug store only once a week, and into a hardware store only nine times a year, by cracky. Then I really started thinkin'."

"About what?" Milt asked.

"About us—in this feed business!" Grandpa snapped. "We don't know how often a farmer comes here to buy feed—how many times a month, or a year. Joe, do you know?"

Joe shook his head. "N—no, I don't. But you've got a point, Grandpa. The more often a farmer comes in here, the more chances we got to sell him."

Grandpa's blue eyes snapped. "You see," he said triumphantly, "even Joe doesn't know. And if the boss doesn't know, how can he expect the rest of us to know?"

"You must be anxious for your check before pay day—your last check," Milt said softly, "to talk about Joe like that."

"Let him fire me, if he wants to. I don't care." Grandpa's face was getting redder. "But I allus say what I think. And I know I'm right—this time. I figure a farmer who likes us comes in to buy about 20 times a year, almost once every two weeks. And are we doin' our darndest to sell him?"

"We are," Pop said.

"We are not!" said Grandpa vehe-

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mently. "Look at those fluorescents. They are not bright enough. We need some of them spotlights on our best displays. Look at those islands. Full of holes. They should always be full of merchandise. That poultry equipment is in the same spot it was last month when I was here. What are you fellows doin' in your spare time—sleeping on feed sacks in the warehouse? We gotta be alert if we want sales. More lights, more displays, more specials, more zip and fire and smiles. That's what the speaker said to the grocers. And I believe him!"

Grandpa let out a sigh and sat down on some feed sacks. His tirade had pretty well exhausted him for the moment.

Joe Brooks smiled. "Grandpa," he said, "that's the best sales training meeting we ever had. You hit all of us where it counts. We've got to pay more attention to that traffic—sell them more when they come here. Now, why don't you go over to Happy's and get yourself some coffee and sweet rolls? That ought to hold you to lunch time."

Grandpa brightened, got up quickly and fiddled with his cane. "By gum, that sounds good," he said. "Lunchin' I'll git a chance to think over some of the things I fergot to tell you. I'll be back."

Off he went to the door, his cane tapping vigorously against the asphalt tile.

"Whew!" said Milt. "I'm glad he isn't here every day. He'd make us work too hard. Even you, Joe."

The brown-haired feed dealer smiled. "I'm just beginning to think," he said, "that hiring of Grandpa Hodgkins one day a month is doing me more good than it is him. He's a terrific investment."

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3. *Tie in* by putting up free attractive *fluorescent* Stonemo posters! Display effectively. They've got *sock and sell.* They drive your "muscular gizzard—healthy digestive system" story home for more sales. SEND FOR YOURS—THEY'RE FREE.
4. *Play the record* of a chicken gizzard grinding for your customers often. It's 78 rpm, unbreakable, and a real sales clincher when you put it to work. Absolutely authentic gizzard grinding sound, and the story of how birds can use this *Stonemo grinding power for more eggs and meat.* SEND FOR YOURS—IT'S FREE.
5. *Tie in* with Stonemo hard-sell newspaper mat picture on this page. It's 73 lines—designed to help you tie in *at the start of the chick season for bigger Stonemo sales.* SEND FOR YOURS—THEY'RE FREE.

If you would like free Stonemo folders, decals, banners, displays, or radio scripts, just send off a post card today. Get more right now—at the start of the chick season—if your supply is low. They work for you all year.

So tie in for profits—make '56 a Stonemo banner year—make your quality feeds do more work for your poultrymen! Remember, Stonemo helps your customers every step of the way from chick to market.

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Send for your free newspaper mats today. Use newspapers in your area to tie in! Run your own local Stonemo campaign. Be Stonemo headquarters in your area. Send also for free posters, gizzard record, folders, decals, banners, displays, radio scripts. Just mail a post card today and get the free Stonemo dealer helps you want.

"EXTRA GRINDING SURFACES"

Superintendents Plan Program for March Convention

KANSAS CITY, MO.—Another busy five-day convention is rapidly taking shape for the Grain Elevator & Processing Superintendents (GEAPS). It will be held at the Hotel Muehlebach here March 18-23.

Divided into general discussion meetings, round tables, symposiums and panel sessions, every major plant operating problem will come under close scrutiny, according to Orrin Kinman, Cargill, Inc., president of the technical society.

Grain grading, sanitation, fumigation, housekeeping and dust explosion hazards, and safety and fire protection occupy the entire day March 19, following a pre-convention "wind-up" session the afternoon before.

Round tables March 20 are devoted to barley and malting flour, cereal and rice milling elevators; marine and exports; wheat, rye and oats; needed inventions, and personal relations and employee training.

Soybeans and flax round tables, corn (commercial as well as processors), and unfinished round tables from the day before will take up all of March 21.

Grain doors, car unloading, truck unloading and loading, plant operation and maintenance, aeration, and feed symposiums pack March 22 to the brim.

Because of the wide over-lapping of interest, and the impossibility of any one delegate covering all of the subject-sessions, March 23 will be devoted to reviewing each recorder's report of his respective session, for the purpose of making notes, asking questions or concluding postponed discussions and decisions. In the past this feature has proven highly successful and profitable to all who attended, Mr. Kinman states.

Inasmuch as two thirds of the delegates bring their wives, a full program is arranged for the several hundred ladies who are expected to attend.

Plant inspection trips, joint breakfasts, lunches and dinners pack the program from early morning until late at night—with two evenings of dancing also scheduled. Over 500 are expected, Mr. Kinman reports.

Pacific Dairy, Poultry Group Convention

LOS ANGELES—Current problems related to cheese, poultry, egg and egg products will be discussed by nationally known speakers during the 32nd annual convention of the Pacific Dairy & Poultry Assn. to be held March 15-17 in the Sheraton-Palace Hotel in San Francisco.

Among the topics to be discussed will be "The Economics of Our Cheese Outlook," "Raising West Coast Chicken Quality," "Purchase and Sale of Turkey on a Grade Out Basis," "Are We Marketing Our Eggs at Satisfactory Margins?" and business ethics.

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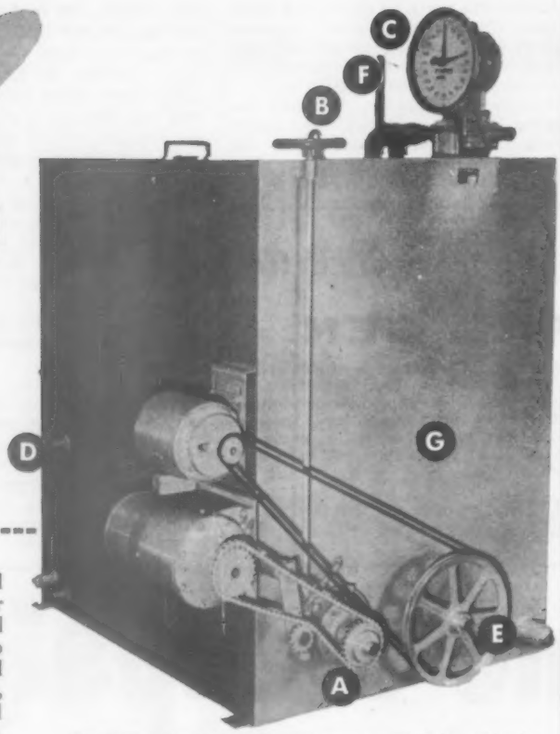


Here's the equipment to end all your Animal Fat blending problems. The new Wenger Series 100 Fat Feeder makes it easy and profitable to blend liquid Animal Fats into hard or soft Pellets or through high-speed mixers in your formula feeds, smoothly, without "balling," clogging or mechanical troubles . . . or affecting the fat stabilizer. Wenger designed this new proportioning feeder to eliminate all contact of stabilized animal fats with copper, bronze or brass. With the Series 100 Feeder you can inject liquid fat directly into the tempering chamber of your hard pellet mill; into the mixing cylinder of any high-speed mixer or Wenger Hi-Molasses Mill.

No Brass, Bronze or Copper ever comes into contact with the animal fats added through the special Sorbite pump. Therefore the stabilizing agent is not affected and the problem of copper-toxicity in the feed is eliminated.

Cut cost of pelleting by blending animal fats which lubricate the dies, reducing wear and replacement to a fraction! Your pellets actually cost less with animal fats added!

HERE'S HOW WENGER FAT FEEDER SOLVES YOUR PROBLEMS!

A **Famed Wenger Proportioning Pump** built into the tank so that the pump is always the same temperature as the fat. This eliminates the danger of the fat setting in the pump. Pump guarantees perfect uniformity of flow at any desired rate of fat delivery from 1 lb. to 50 lbs. per minute. Cannot clog or become obstructed by fat particles.

B **Exclusive Wenger Pump Control**—does what no valve can do—feed any volume without clogging. Simple dial setting accurately regulates the flow. No restrictions or valves in fat flow line.

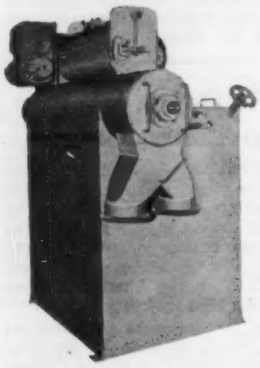
C **Special Liquid Fat Meter**—10" face . . . dual setback hands . . . recording 6-figure totaling device . . . calibrated in lbs. of fat.

D **Steam Temperature Controls**—Fully adjustable for 135° to 175°—the perfect temperature for liquid fat feeding . . . iron heating coils . . . thermometer and automatic thermostat.

E **Special Built-in Agitator**—keeps liquid fats uniform . . . driven by 1½ h.p. TEFC motor.

F **By-Pass Valve**—permits recirculating fat without shutting down unit.

G **400 Gallon Tank**—provides constant supply to your pellet mill or mixer.

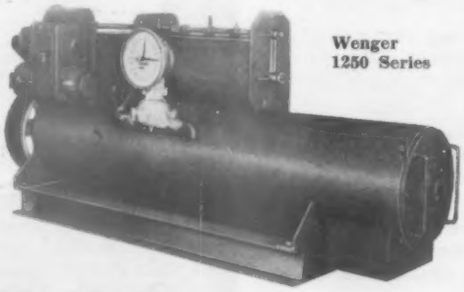


MIX UP TO 15 TONS OF FAT-BLENDED FEED AN HOUR WITH NEW WENGER SERIES 750 FAT MIXER!

For fast, efficient fat mixing there's nothing on the market that can touch the new Wenger Series 750 Hi-Speed Fat Mixer. Has all the anti-corrosive and special fat metering features of Series 100 Fat Feeder—cast Sorbite pump, special agitator, automatic temperature controls, liquid-fat meter.

Series 750 Fat Mixer (on left) can be used as either a fat or molasses mixer or, when coupled with Wenger Series 100 Fat Feeder, for mixing *both* fat and molasses.

Mix up to 40 tons per hour with Wenger 1250 Series. Ask for information about Wenger's new 1275 Series Fat Mixer (not illustrated) which is equipped with its own built-in fat tank. Mix several liquids simultaneously—fats, molasses, fish solubles, fermentation solubles, liquid whey, etc.



Wenger 1250 Series

WRITE TODAY FOR COMPLETE INFORMATION

Wenger Mixer Mfg. Co.

SABETHA, KANSAS

SCRATCH and SCRAPS

In a gay and carefree mood a man telephoned a friend at 2 o'clock in the morning. "I hope I haven't disturbed you," he said cheerfully.

"Oh, no," the friend replied. "That's quite all right. I had to get up to answer the phone, anyway."

◆ ◆ ◆

"I understand your husband has been ill. What's he doing for his condition?"

"Well, his doctor prescribed a shot of rye whiskey and two aspirins every four hours."

"Oh, really? How is he?"

"Ten weeks behind on the aspirin and two years ahead on the rye."

◆ ◆ ◆

In the town there was much festivity. Down the street came a beautiful white horse. On the horse was Lady Godiva riding side saddle, and all around the people were shouting, "Hooray for our side!"

◆ ◆ ◆

Everything is love and kisses, 'til your girl becomes your Mrs.

◆ ◆ ◆

The crystal gazer was addressing one of her clients: "You will be poor and unhappy until you are 40."

"And after that?"

"You'll get used to it."

◆ ◆ ◆

Arriving home from a party one hot July evening, Mrs. Roeser confronted her husband. "I'll never go to another party with you as long as I live," she fumed.

"Why," asked Frank, amazed.

"You asked Mrs. Jones how her husband was standing the heat."

"Well?"

"Why, her husband has been dead two months."

◆ ◆ ◆

Aunty—Precious, what did you do in school today?

Precious—We had a nature study. Each pupil had to bring a specimen from home.

Aunty—And what did you take, Precious?

Precious—I took a bedbug in a bottle.

◆

Fellows who drive with one hand on the wheel are usually headed for church. Some of them will walk down the aisle—others will be carried.

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Feed Service Bulletin Board

Helpful Notes on Feeding and Management for Feed Men and Their Customers

Beef Cattle Selection

The beef production industry must rely on technological advances to keep pace with other agricultural fields. And recent findings on selection of stock that can make the best gains is one of the most important advances in recent years, according to a bulletin published by the Texas Agricultural Experiment Station.

The bulletin was based on a continuing study being conducted at the McGregor substation. Results of the tests for selection of cattle for gaining ability with large numbers of animals indicate that heritability of gaining ability is 50-55%, a relatively high value which indicates that selection can be effective in increasing the gaining ability of beef cattle, the bulletin says.

On the basis of the tests, several recommendations to the breeder and producer are made in the bulletin, as follows:

- Keep cattle from which selections are to be made under practical conditions for production.
- Select at a practical age for production (usual market age).
- Use actual weights.
- Determine ages of calves by recording the date of birth.
- Compare each animal on the basis of gain in relation to gain of others at the same time and under the same conditions.
- Select on the basis of weight gain.
- Select on the basis of the individual's record.
- Select both sexes — sires more carefully.
- Keep selection simple and sound.
- When buying, get tested, high-gaining sires.

◆

Is Brooder House Ready?

Careful attention should be given to the cleaning and repairing of the brooder house in preparation for growing replacement chicks, says Ben Wormeli, extension poultry husbandman of Texas A&M College.

The brooder houses should be cleaned and put into good repair by making sure that all windows, doors and ventilator sections are well fitted and working smoothly. The roof should be checked for leaks.

Thermostat apparatus on brooder stoves should be carefully checked and stoves cleaned to assure a dependable source of heat when it is needed, says Mr. Wormeli.

Adequate feeder and watering space is recognized by poultrymen as important to uniform growth of all birds. Up to three weeks of age, birds should be provided with 1 in. of feeder space per bird. It should be increased to 2 in., from three to four weeks of age, and during six to seven weeks, it should be increased to 3 in. per bird.

These needs can be met by one 4-ft. trough for each 100 chicks at the start. At six to seven weeks of age they will need three troughs 4 ft. long by 4 in. deep per 100 birds.

Mr. Wormeli recommends five 1-gal. waterers by each brooder having a capacity of 500 chicks. From two to three weeks of age, two waterers with a 3-gal. capacity should be provided for each 100 birds. If a water system is available, a 4-ft. automatic water trough should be provided for each 250 chicks.

Where chicks have access to range, Mr. Wormeli recommends 1 sq. ft. of floor space for every two birds. Since green feed is often not available on the range, there is a trend towards growing pullet replacement chicks in confinement, he adds. Under these conditions each bird should be provided with 1 sq. ft. of floor space, until they are eight or nine weeks of age.

On this basis a 30 ft. by 40 ft. house would be required to raise replacements for a thousand hen laying flock. Mr. Wormeli adds that it will probably be to the poultryman's advantage to double this space, 30 by 80 ft., and keep the pullets confined to the house until maturity.

One sound method that is now being employed by some poultrymen is to leave the chicks in one house for the six months growing period and for the first year of egg production.

Making sure the brooder house and equipment are adequate and in good repair will pay good dividends in the production of a high percentage of good quality uniform pullets for next year's laying flock, says Mr. Wormeli.

◆

Meat-Type Hogs Best

A meat-type hog is not a bacon or lard animal but one which gives a high yield of lean cuts of pork when slaughtered, reports Richard Hollandbeck, Purdue University extension swine specialist.

In view of the present spread in

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News about

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so grow your profits

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Stablizes fats and oils—keeps feed fresh, sweet-smelling.

Preserves nutritional values—increases utilization of vitamins A and E.

Increases carotenoid pigmentation—makes broilers more attractive, gets higher price.

Controls "crazy chick" disease—virtually eliminates mortality from encephalomalacia.

Good-rite **DPPD** is supplied in feed grade (95% minimum purity) as a free-flowing powder for addition to poultry feed in concentrations of ¼ to ½ pound per ton of feed. For samples, additional information or a list of distributors, please write Dept. JD-2 B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

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price between lean cuts and pork fat it is important to emphasize heavy muscular development with a minimum of finish, Mr. Hollandbeck says.

Reducing the finish on a lard-type hog may improve its value from a market point of view but does not, in any sense, make it a meat-type hog.

Most breeders recognize short, fat, overdone hogs for what they are and are selecting away from that kind. However, there is another kind of undesirable hog that is not as easily recognized. He is the animal with adequate length and what appears to be about the right amount of finish, but which has very thin muscular development and more finish than expected when slaughtered, Mr. Hollandbeck explains.

Distinguishing features of this meatless hog are fine bone, a narrow stance in both the front and rear, a loose jowl, a flabby middle, a narrow rump, and tapering hams with considerable crotch fat. He does possess adequate length but is lacking in muscular development.

Mr. Hollandbeck defines a meat-type hog (200-210) lbs. live weight) as one whose carcass will measure 29 to 31 in. in length, from 1.1 to 1.6 in. in average backfat thickness, and will have at least 3.75 sq. in. in the cross section of the loin eye at the tenth rib. He is also the type of hog that can be carried to a heavier weight and still produce a desirable product.

The true meat-type hog has enough substance and growing ability to reach a market weight of 200 lb. in six months or less under farm conditions on a common practical ration consisting largely of corn. And he will retain his meatiness while being pushed for rapid gain.

Meat-type pigs are larger for their weight in terms of bone, muscle and vital organs, and therefore, are more vigorous than the lard-type, according to the Purdue specialist. Figures available on the feed required per unit of gain show that meat-type pigs will gain as well as any other type.

And there is no question, Mr. Hollandbeck says, that such hogs will produce more red meat per unit of feed than any other type or kind. All this makes the meat-type hog the most economical to produce, Mr. Hollandbeck concludes.

◆

Crowding Pullets Unwise

Ordering more chicks than needed to provide enough pullets to fill laying houses is not a good practice, according to W. R. Whitfield, extension poultryman at Iowa State College.

He says that this practice means that there will be waste in paying for too many chicks, in feeding too many chicks and in loss of egg production through crowding pullets.

Experience shows that pullets produce efficiently only when they have at least 3 sq. ft. of floor space per pullet in the laying house, Mr. Whitfield says. He points out that farm producers believe that farmers can show a good profit from eggs under 1956 conditions only if they cut down production costs.

One of the best ways to cut these costs, Mr. Whitfield says, is by limiting chick purchases to just enough to fill the laying house properly. That means a poultry producer should buy just 15% more chicks than the number of pullets his laying house can provide with 3 sq. ft. of floor space.

He says wise poultrymen have got away from the idea of crowding hens in the laying house to increase production. It doesn't work. The way to increase production is to get more eggs per hen.

He says when he worked with hatchery flocks 30 years ago he often couldn't see the floor because there were so many hens in the house.

This isn't true so often nowadays. With fewer hens, total production has increased rather than decreased. There were 140 million hens in Iowa in 1925 producing an average of only 120 eggs a year per hen. Now there are only 115 million hens but they are producing an average of 200 eggs per hen.

Mr. Whitfield says this management step has taken place on thousands of farms. There is room in the houses for more feeders and waterers — even sometimes actually room to spare. And total egg production has increased geratly.

◆

Oat Silage Good for Cows

Oat silage is a good roughage for dairy cows if fed right, according to dairy scientists at the University of of Illinois. They say that oat silage has been a satisfactory grass silage for feeding the university dairy herd.

The Illinois dairymen believe that a 13-14% total protein grain mixture should be fed along with a good legume. Producing cows that get only oat silage as roughage need at least 15% protein in the grain mixture, they say.

Feeding high-moisture oat silage may cause a drop in milk production, they point out, so they advise a gradual shift from an all-hay to a partial hay and oat silage feeding schedule to keep production up.

It may be wise, they say, for a farmer to feed more grain than usual along with oat silage to make sure the cows get enough energy. One pound of grain to each 2½ lb. of milk produced should maintain top production. If production can be kept high with less grain, that's the practice to follow, they say.

Experience with oat silage at the university dairy farm shows that adding molasses or ground ear corn to the silage while ensiling it as a preservative will improve its quality, the Illinois dairymen report.

◆

Standard for Egg Flocks

What should a market egg flock do? The following are standards of production, feed consumption, culling and mortality based on what some of the better market egg flocks are doing, according to Richard Warren, extension poultryman, University of New Hampshire:

Egg production per year (per pullet housed), 200.

Egg production per year (hen day basis), 225.

Egg production per cent (yearly average), 62%.

Feed consumption per bird per year (high energy ration—Heavies), 105 lb.

Feed consumption per bird per year (high energy ration—Leghorns), 95 lb.

Pounds feed per dozen eggs (Heavies), 5.5 lb.

Pounds feed per dozen eggs (Leghorns), 5 lb.

Culling first eight months after housing, none—than 5% per month.

Mortality 1% per month, 12% per year.

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PE/411

CONVENTION CALENDAR

Feb. 19-21—Colorado Grain, Milling & Feed Dealers Assn.; Shirley-Savoy Hotel, Denver; sec., R. B. Kelley, 714 Cooper Bldg., Denver 2, Colo.

Feb. 19-21 — Ohio Grain & Feed Dealers Assn.; Commodore Perry Hotel, Toledo; sec., L. E. Folsom, 222 Chatham Rd., Columbus 14, Ohio.

Feb. 20 — Iowa Swine Producers Day; Iowa State College, Ames; chmn., Damon Catron, Animal Husbandry Dept., Iowa State College, Ames, Iowa.

Feb. 22 — Mutual Millers & Feed Dealers Assn.; Hotel Statler, Buffalo, N.Y.; sec., Mrs. G. A. Bentley, 41 Chautauqua Ave., Jamestown, N.Y.

Feb. 22-23 — Virginia Polytechnic Inst. Nutrition School; Hotel Roanoke, Roanoke, Va.; chmn., Paul M. Reaves, V. P. I., Blacksburg, Va.

Feb. 24—National Feeder Finance Credit Group; Curtis Hotel, Minneapolis, Minn.; sec., Robert Lindholm, 502 Thorpe Bldg., Minneapolis 2, Minn.

Feb. 27-28 — Midwest Feed Mfrs. Assn.; Hotel Muehlebach, Kansas City; exec. V. P., Lloyd S. Larson, 20 West Ninth Street Bldg., Kansas City, Mo.

March 7 — Distillers Feed Conference; Sheraton-Gibson Hotel, Cincinnati, Ohio; sec., Lawrence Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

March 15-16—Oregon Feed & Seed Dealers Assn.; Multnomah Hotel, Portland; sec., Leon Jackson, 809 Lewis Bldg., Portland 4, Ore.

March 18-19—Quad-State Convention sponsored by Sioux City Grain, Feed & Seed Assn.; Martin Hotel, Sioux City, Iowa; sec., N. G. Nichols, 901 Missouri River Road, Sioux City, Iowa.

March 18-23 — Grain Elevator & Processing Superintendents; Muehlebach Hotel, Kansas City, Mo.; sec., Dean M. Clark, "Grain," Board of Trade, Chicago 4, Ill.

March 22-23—Maryland Nutrition Conference for Feed Mfrs.; Shoreham Hotel, Washington, D.C.; chmn., Dr. G. L. Romoser, U. of Md., College Park, Md.

March 29—Illinois Swine Growers Day; U. of Ill., Urbana; chmn., S. W. Terrill, Dept. of Animal Science, U. of Ill., Urbana, Ill.

April 3—Purdue Egg Day; Lafayette, Ind.; chmn., David D. Jackson, Ind. Agricultural Extension Service Lafayette, Ind

April 5—Texas Feed Manufacturers, Hotel Texas, Ft. Worth; sec., Monroe U. May, P.O. Box 6666, Dallas 19, Texas.

April 6-7 — Texas Grain & Feed Dealers Assn., Hotel Texas, Ft. Worth; sec., Ben Ferguson, 614 Meacham Bldg., Ft. Worth 2, Texas.

April 9-11—American Assn. of Feed Microscopists; Deming Hotel, Terre Haute, Ind.; sec., Robert C. Wornick, Chas. Pfizer & Co., Terre Haute, Ind.

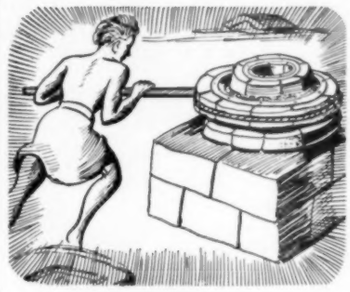
April 12-14—California Hay, Grain & Feed Dealers Assn.; Ambassador Hotel, Los Angeles; chmn., Jack Flammer, 5935 So. Malt Ave., Los Angeles 22, Cal.

April 12-18—National Fisheries Institute; 4-Most Hotels, Miami Beach, Fla.; mgr., Mal Xavier, 1614 20th St., N.W., Washington 9, D.C.

April 16-17 — Nebraska Grain & Feed Dealers Assn.; Hotel Cornhusker, Lincoln; sec., Howard W. Elm, 917 Trust Bldg., Lincoln, Neb.

April 19—Illinois Feed and Nutrition Conference; Univ. of Illinois, Urbana; chairman, Dr. John H. Byers, Dairy Science Dept., Univ. of Ill., Urbana, Ill.

April 27—Purdue Cattle Feeders'



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These typical testimonials reflect some of that enthusiasm. Many were even more glowing in their praise of Vigofac. These user reports show that farmers are ready for feeds containing Vigofac and will be wanting a brand that *does!*

Fast, cost-cutting gains under practical farm conditions sell producers on formula feeds containing Vigofac.

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. . . Gordon McElravy, Marco, Indiana

"Best pigs I've ever had—and the evenest bunch. Not a runt in the whole 160 with Vigofac."
. . . Lyle Jefson, Garner, Iowa

"Pigs weighed 50 lbs. at weaning. Stayed even all the way to market . . . topped 200 lbs. at 5 months. Can heartily recommend a pig starter with Vigofac."
. . . Chas. Van Cura, Jackson, Minn.

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. . . Hollis Koenig, Royal, Iowa

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Day; Lafayette, Ind.; chmn., W. M. Beeson, Dept. of Animal Husbandry, Purdue University, Lafayette, Ind.

May 3-5 — Kansas Grain & Feed Dealers Assn.; Kansan Hotel, Topeka; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

May 13-14—Missouri Grain, Feed & Seed Assn.; Kentwood Arms Hotel, Springfield; Sec., D. A. Meinershagen, Higginsville, Mo.

May 21-22 — National Cottonseed Products Assn.; Statler-Hilton Hotel, Dallas; sec., John F. Moloney, 19 S. Cleveland St., Memphis, Tenn.

May 23-25—American Feed Manufacturers Assn.; Morrison Hotel, Chicago; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4, Ill.

June 4-5 — Eastern Federation of Feed Merchants; Hotel Commodore, New York; sec., Howard J. Benson, Eastern Federation of Feed Merchants, Sherburne, N.Y.

June 4-5—Georgia Feed & Poultry Conference; Dinkler Plaza Hotel, Atlanta; sec., Will L. Kinard, 208 William-Oliver Bldg., Atlanta 3, Ga.

June 6-9 — Grain Processing Machinery Manufacturers Assn.; French Lick Springs Hotel, French Lick, Ind.; sec., Raymond J. Walter, 511 Fifth Avenue, New York 17, N.Y.

June 7-10—Canadian Feed Mfrs. Assn.; Sheraton Brock Hotel, Niagara Falls, Ont.; reg., Herbert Hickling, Wm. Stone Sons, Ltd., Ingersoll, Ont.

June 11-12 — Montana Nutrition Conference; Montana State College, Bozeman; chmn., O. O. Thomas, Montana State College Agricultural Experiment Station, Bozeman, Mont.

June 12-14—Alabama Poultry Industry Assn.; Thomas Jefferson Hotel, Birmingham, Ala.; sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 15—Pacific Northwest Grain Dealers Assn.; Davenport Hotel, Spokane, Wash.; sec., Pete Stallcop, 418 Peyton Bldg., Spokane, Wash.

June 17-19—Indiana Grain & Feed Dealers Assn.; Purdue Union Bldg., Purdue University, Lafayette, Ind.; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 28-30—Association of Southern Feed & Fertilizer Control Officials; Hotel Roanoke, Roanoke, Va.; sec., Bruce Poundstone, U. of Ky. Agricultural Experiment Station, Lexington 29, Ky.

Aug. 10-11—North Carolina Feed Mfrs. Assn.; Fort Sumter Hotel, Charleston, S.C.; sec., Louis Maxwell, Box 897, Goldsboro, N.C.

Aug. 13-14 — Wisconsin Nutrition School for Feed Men; U. of Wis., Madison; Chmn., Gus Bohstedt, Dept. of Animal Husbandry, U. of Wis. College of Agriculture, Madison, Wis.

Oct. 4-5—Texas Nutrition Conference; Texas A&M, College Station, Texas; chmn., J. R. Couch, Dept. of Poultry Husbandry, Texas Agricultural & Mechanical College, College Station, Texas.

Oct. 15-16—California Animal Industry Conference; Fresno Memorial Auditorium, Fresno; sec., John Gilmore, 1400 10th St., Sacramento 14, Cal.

Oct. 17-18—Assn. of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., L. E. Bopst, U. of Md., College Park, Md.

Dec. 3-4—Farmers Elevator Assn. of South Dakota; Huron, S.D.; sec., C. C. Anderson, 423 Citizens Bldg., Aberdeen, S.D.

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Sinusitis, CRD Test Promising

DAVIS, CAL.—A blood test to detect carriers of sinusitis in turkeys and chronic respiratory disease in chickens shows promise as an experimental tool but can't be regarded as ready yet for field use.

That is the essence of a statement issued from a meeting recently of top poultry disease research men from all sections of the country. The group met at the University of California School of Veterinary Medicine here.

Recognizing pressure upon U.S. poultry breeders and hatching egg producers to have the experimental test applied as a control for the disease, the research group emphasized that the blood test is only a step in the control of disease.

The test for sinusitis and CRD was developed about two years ago by veterinary scientists at California and Connecticut agricultural experiment stations. Research has continued to determine the specificity of the test for detecting birds that have or have had the infection.

Experiments thus far show it a reliable test on a chicken flock basis. If tests of a flock show no positive reactors, the flock can be considered uninfected. But accuracy of the test on individual chickens in a flock is still in question, the poultry pathologists stated. Some individual birds, they reported, do not react to the blood test, and yet they can be infected.

In turkeys even a negative test for a flock is no proof that there is no sinusitis infection, the group emphasized. It is necessary to correlate history and other factors as well as the blood test to determine freedom of disease.

Test materials are not available commercially or from any of the experiment stations, the group meeting at Davis reported, and poultry scientists are not yet in a position to advocate wholesale testing as a control method.

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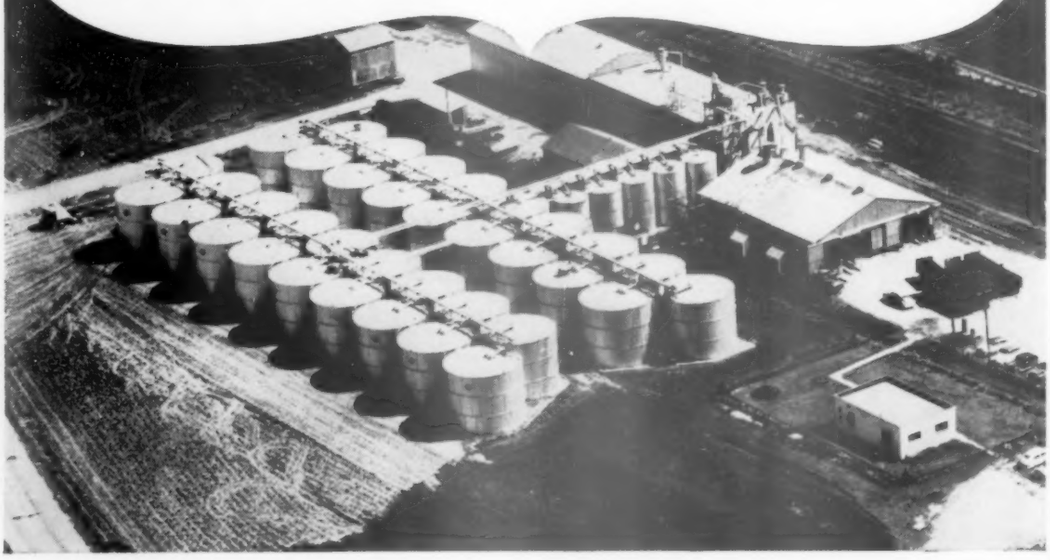

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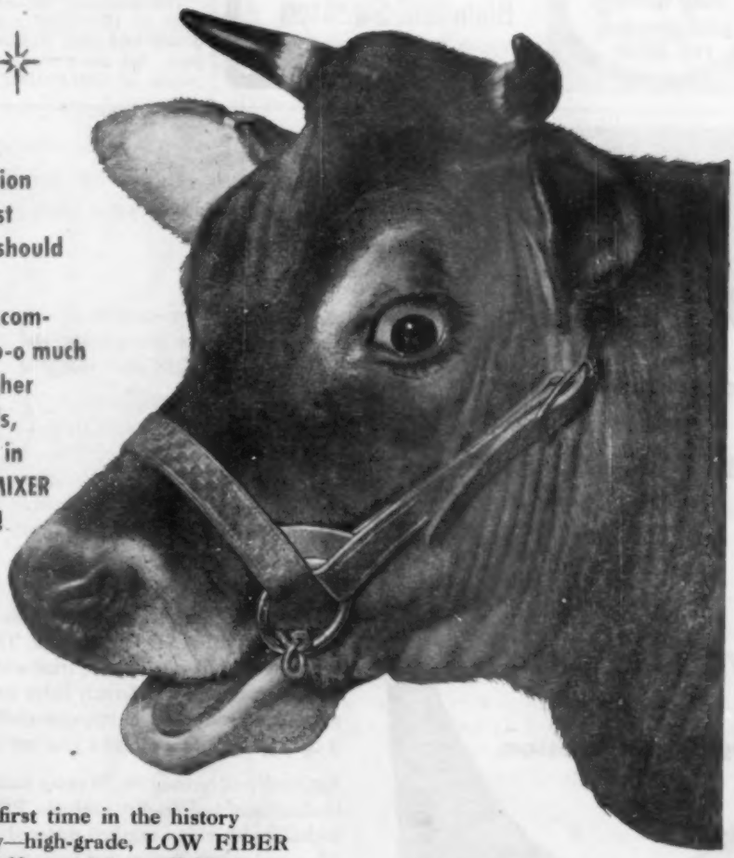

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St. Regis Sales Hit Record Level in 1955

NEW YORK — St. Regis Paper Co. reports that its sales and net income for 1955 reached record levels for the company. A preliminary statement, issued recently after a meeting of the board of directors, indicates net sales at approximately $257,000,000, compared with $200,090,143 for 1954.

The company's profit from operations amounted to about $39,250,000 in 1955, compared with $28,048,529 in 1954.

Net income for 1955 reached a level in excess of $19,000,000, equal after preferred dividends, to about $2.95 a share on 6,266,115 shares of common stock outstanding at the end of the year. This compared with $14,930,489, equal to $2.62 a share on 5,470,933 common shares outstanding at the close of 1954.

The preliminary statement points out that the figures for 1955 again include accelerated depreciation amounting to over $3,500,000.

The company reports that if results of its recently acquired companies had been included for the full year, net sales would have been in excess of $287,000,000, with net income coming close to $20,500,000 equal to approximately $3.17 a share on the 6,266,115 common shares outstanding at the end of the year.

Three recently acquired companies were consolidated for the following periods: Michigan Panelyte Molded Plastics, Inc., for nine months, Pollock Paper Corp. for seven months and General Container Corp. for four months.

Directors declared a dividend of 45¢ share on the common stock, payable March 1 to stockholders of record Feb. 4. The quarterly dividend of $1.10 a share on the preferred stock was declared payable April 1 to holders of record March 2.

Push-Button Handling Suggested for Farms

NEWARK, DEL.—Push-button control is being suggested for feeding operations as well as for feed manufacturing plants.

The advice was given recently by W. E. Larsen, agricultural engineer at the University of Delaware. His comments were made in connection with an exhibit on "taking the backache out of feed handling" which was presented at the university's Farm and Home Week.

The exhibit showed methods of getting feed to cows and chickens by push-button control rather than the "shovel and muscle" method.

Mr. Larsen said that motors and elevators which are now being used on some farms can quickly pay for themselves.

"A man working real hard with a shovel may develop as much as one-tenth horsepower," he said. "If he works an hour, he costs his employer at least $1 in wages."

"But a ¼-horse electric motor will work for only 1 or 2¢ 'wages' an hour. Motors, hooked up to inexpensive 'auger' type conveyors can move feed automatically from a bulk bin, measure each batch, then move it to the animals or to the mixing bin—all at the flick of a switch."

Large feed bins do not have to be "built up in the air" as some people think, Mr. Larsen said. They can be fitted into the present feed room on many farms without the need to build a new roof, he said.

New Sales Offices

NEW YORK—New sales offices with increased staffs have been opened by Fielden Instrument Division of Robertshaw-Fulton Controls Co. to serve the New York and Chicago areas. Sales of the division's industrial instrumentation products in these areas were formerly handled by manufacturer's representatives.

The New York office, located at Englewood, N.J., will have a complete staff of sales engineers, including Austin Platt, eastern region sales supervisor, Edward Greiner and Norman Dayton.

The Chicago office is headed by Robert Edsall, central region sales supervisor. Mr. Edsall will be assisted by William Johnson, sales engineer.

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OYSTER SHELL for TOP egg production

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Inside Information on NiCarbazin

No. 3 *in a series*

With the introduction of a product such as NICARBAZIN, many technical questions arise. To answer these questions for the Feed Industry, Merck research, production, and sales executives hold regular round-table discussions. What follows is a report of the answers these men gave at their latest meeting to questions of broad interest to the trade.

Q. Is the effect of NICARBAZIN on coccidiosis consistent?

A. *Veterinarian:* Consistency is one of NICARBAZIN's features. For example, surveys were run with Delmarva growers who used NICARBAZIN and other leading coccidiostats. Out of 174,542 birds protected with NICARBAZIN, none died from coccidiosis. Among the 48,500 birds on other coccidiostats, mortality ran as high as 12 per cent in some flocks.

★ ★ ★

Q. What would be the effect on swine if a grower fed them leftover feed containing NICARBAZIN?

A. *Toxicologist:* Our recent studies verify that NICARBAZIN is harmless to young or feeder swine just as it is nontoxic to chickens, turkeys, dogs, cats, sheep, and laboratory animals.

Q. Is subsequent immunity to coxy in replacements affected by a preventive program with NICARBAZIN?

A. *Immunologist:* Preventive use of NICARBAZIN in replacements during the starting and growing periods permits exposed birds to develop a *solid* immunity against coccidiosis. Large-scale, commercial tests show that NICARBAZIN, when fed during the growing and starting periods, has no adverse effect on later egg production or fertility.

★ ★ ★

Q. Can NICARBAZIN be included in formulas for laying hens or breeding flocks?

A. *Animal Nutritionist:* No. NICARBAZIN should not be fed after the first pullet eggs are laid. NICARBAZIN should not be added to rations for laying birds since it can reduce hatchability and affect eggshell color.

Q. Does NICARBAZIN lose potency during prolonged storage?

A. *Research Chemist:* No. It is remarkable that a drug so active against poultry coccidia should be so stable in the presence of so many other feed ingredients. Chemical and biological assays, run after a year's storage, showed NICARBAZIN had no loss of effectiveness. Also, pelleting or crumblizing does not affect the stability of NICARBAZIN.

★ ★ ★

Q. How do NICARBAZIN and other coccidiostats compare in their effects on market weight, production cost, and profit?

A. *Veterinarian:* Comparative experiments with NICARBAZIN and a competitive preventive coccidiostat were conducted in co-operation with commercial growers. It was found in this series of tests that the average weight of the NICARBAZIN-protected birds was 5.2 per cent higher; the cost per pound of gain was 10.1 per cent lower; and the profit per 1,000 birds was 41.15 per cent higher than on the other coccidiostat.

NEW—35mm. color and sound film strip "Protection That Pays Off"—highlights in cartoon style the benefits of NiCarbazin. Copies available through Merck sales representatives.

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

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Feeding of Laying and Breeder Chickens and Turkeys

By Dr. G. F. Combs

EDITOR'S NOTE: Nutrient requirements of laying hens vary with certain factors. In the accompanying article, Dr. Combs of the University of Maryland poultry department, points out these factors and lists estimated feed requirements. He also lists suggested levels of various nutrients in practical rations for laying and breeding chickens and turkeys. The article is the text of a talk Dr. Combs gave at the recent Kansas Formula Feed Conference.

A laying hen needs feed to supply nutrients for maintenance of body weight, for activity, temperature control, digestion, metabolism, etc., as well as for the production of eggs.

The relative amounts of certain nutrients may be considerably higher for the production of eggs than are required for other functions. For example, an 11% protein ration has been reported adequate to maintain a non-laying pullet. On the other hand, the NRC protein requirement for laying hens is 15% of the total feed.

Ordinarily from 60 to 80% of the total feed is used by the hen for purposes other than egg production. The protein requirement for egg production is considerably higher than that for activity and maintenance functions. One would predict, then, that as the level of production increases in any flock, the minimum per cent protein required in the total feed would also increase.

Levels of protein above 15% have proved beneficial for high-producing flocks in some recent studies. The estimated protein needs of the hen, together with the level required in her ration to meet those needs at different levels of production, are shown in Table 1. These values are calculated to illustrate the effect of production on the minimum amount of protein required in the ration.

Not only the rate of production but also the body size of the hen influence greatly the feed requirements. This becomes particularly noticeable when expressed in terms of feed required per dozen eggs produced (see Table 2).

Table 1—Influence of Egg Production on Level of Protein Required in Ration (Calculated)

Total annual feed consumption per hen,* lb.	Est. protein requirement† per hen per year, lb.	Est. required protein level of ration, %
	Non-layer	
74	8.1	11.0
	100 eggs per hen per year	
88	11.7	13.3
	200 eggs per hen per year	
102	15.3	15.0
	300 eggs per hen per year	
116	18.8	16.1

*Values calculated for 6-lb. hens.

†Based on observations of Graham (1934) that 11% protein level was adequate for non-laying pullets, and that 15% protein was adequate for supporting an annual production of 200 eggs per hen.

Table 2—Feed Requirements of Laying Hens, as Influenced by Body Size and Rate of Production*

Body weight, lb	Annual feed consumption per hen	% inc. over non-layers in feed cons.	Feed consumed per dozen eggs	% of feed used for egg prod.
		Non-layers		
7	81	..	..	None
5	65	..	..	None
3.5	52	..	..	None
		150 eggs per year		
7	103	27	8.2	21.4
5	87	34	7.0	25.0
3.5	74	43	5.9	29.7
		250 eggs per year		
7	117	44	5.6	30.8
5	101	55	4.9	35.7
3.5	88	69	4.3	40.9

*Based on Nutritional Requirements of Poultry, NRC, 1954.

Differences in Consumption

These differences in feed consumption also provide an interesting clue as to the type of ration which might be suitable for different flocks. If one compares the increase in total amount of feed required by hens to lay 150 and 250 eggs per year, the difference among hens of various weights becomes striking, indeed. This is shown in Table 2 as per cent increase in feed consumption of laying birds over that of non-laying birds of the same body weight.

Accordingly, a 3½-lb. hen laying at the rate of 250 eggs per year would need to increase feed intake approximately 69% over that required if she laid no eggs. For the same level of production, a 7-lb. layer would need to increase her feed intake only 44%. Therefore, the small hen in high production must be able to consume considerably more feed per unit of weight than the heavier hen to maintain high production for an extended period.

Pelleted feeds or high-energy all-mash feeds are needed to insure an adequate feed intake for high egg producers. When the energy level of the feed is increased, the level of protein and other nutrients should also be increased proportionately. Each

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"Thirty tons of feed sold that day, and all of it was brand new business!"
LEE STULL
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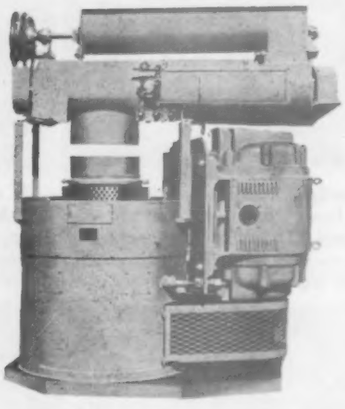

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The JUMBO 100 is the newest in a long line of highly successful Pellet Mills designed and made by HELM Manufacturing Co. Helm's engineering staff, long recognized as specialists in the Oil Milling Industry, have incorporated all of their know-how into the design and construction of the JUMBO 100, which assures you of a high capacity Pellet Mill that is unsurpassed for doing the pelleting job you desire.

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Table 3—Estimated Per Cent Crude Protein Required for Laying Chickens as Influenced by Per Cent Production, Body Weight and Energy Level of Feed

Cal. prod. energy per lb. of ration	Average body weight, lb.	Per cent egg production				
		0.0	27.5	55.0	82.5	100
830	4	8.6	11.3	13.2	14.6	15.3
	5	9.2	11.6	13.3	14.6	15.2
	6	9.6	11.9	13.4	14.5	15.2
	7	10.4	12.1	13.5	14.5	15.1
880	4	9.1	12.0	14.0	15.5	16.2
	5	9.8	12.3	14.1	15.5	16.1
	6	10.4	12.6	14.2	15.4	16.1
	7	11.1	12.9	14.3	15.4	16.0
930	4	9.6	12.7	14.8	16.4	17.1
	5	10.3	13.0	14.9	16.4	17.0
	6	11.0	13.3	15.0	16.3	17.0
	7	11.7	13.6	15.1	16.3	16.9
980	4	10.1	13.4	15.6	17.3	18.0
	5	10.9	13.7	15.7	17.3	17.9
	6	11.6	14.0	15.8	17.2	17.9
	7	12.3	14.3	15.9	17.2	17.8

Table 4—Suggested Levels of Certain Nutrients in Practical Rations (Total Feed Basis) for Laying and Breeding Chickens and Turkeys

	Laying chickens	Breeding chickens	Breeding turkeys
Productive energy, cal./lb.	900-1,000	900-1,000	850-950
Crude protein, %	15-18	15-18	15-16
Calorie-protein ratio*	56-64	56-64	60
Calcium, %	2.25-2.5	2.25-2.5	2.25
Phosphorus, % (avail.**)	0.45-0.5	0.45-0.5	0.5
(total)	.75-.8	.75-.8	0.75-.8
Salt (added), %	0.5	0.5	0.25-0.5
Iodine, mg./lb.	0.5	0.5	0.5
Manganese, mg./lb.	25	25	25
Vitamin A, IU/lb.	3,500-4,000	4,000-5,000	4,500-5,000
Vitamin D_3, ICU/lb.	400-500	500-600	600-700
Riboflavin, mg./lb.	1.2-1.6	1.7-2.0	2.0-3.0
Pantothenic acid, mg./lb.	3-4	5-6	8-9
Vitamin B_{12}, mcg./lb.	1.5	3	3
Choline, mg./lb.	450	450	450
Niacin, mg./lb.	15	15	15
Folacin, mg./lb.	0.2	0.25	0.32

*Calories of productive energy per pound divided by per cent of crude protein (varies with rate of egg production).

**Includes phosphorus from inorganic sources, animal sources and 30% of that from plant sources.

pound of all-mash ration for layers should contain a minimum of 900 calories of productive energy.

The estimated protein requirements of laying hens based on level of production, body size, and energy content of the ration are given in Table 3.

Combined Nutrients Important

The method of feeding, that is, all-mash or mash and grain, is not nearly so important as is the combination of nutrients which is actually consumed by the bird. No matter which method is used, the hen must receive the nutrients required to continue to lay at an optimum rate.

All-mash programs have proven very satisfactory, provided that the energy levels were relatively high. Low-energy all-mash feeds are not satisfactory, since the bird apparently does not consume enough total feed. When mash-grain systems are used, it is important that the mash be made to fit the particular feeding system. In some instances, 24 to 26% protein mashes are used with relatively large quantities of grain. In others, 18 to 20% protein mashes are fed with less grain.

Unless the protein level of the mash mixture is relatively high as well as the level of other critical nutrients, it is important that the quantity of grain fed be restricted as necessary to prevent the bird from overconsuming grain and rendering her total ration incomplete. This usually leads to

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More and more small and medium size manufacturers are finding out that a laboratory of their own is a sound, practical method of stimulating growth in the feed business. Your own lab enables you to cut the cost of control checks on supplies and finished feeds. It gives you tools for research of your own, marks you as a progressive, service-minded manufacturer.

Shown above is a Kjeldahl apparatus for protein determination, heart of any feed laboratory. LABCONCO is the world's leading manufacturer of Kjeldahl apparatus. Labconco also offers you the industry's most complete line of related equipment and furniture.

You'll be surprised how little it costs to install a lab to handle a limited volume of work. Drop us a line. Give us a general idea of your requirements. We'll be happy to make a proposal, including prices. We've had nearly 30 years' experience planning and supplying equipment for feed laboratories of all sizes. Drop us a line . . . today!

LABORATORY CONSTRUCTION COMPANY

1112 Holmes, Kansas City, Missouri

Broiler Council

dustry members' advertising and merchandising.

mer to cover the time when families over the nation begin their move to

Illinois Feed and

excessive fattening and reduced egg production.

Body weight is normally a good index by which to determine the proportion of grain and mash to be fed. In any case, the feeding method prescribed by the feed manufacturer should be followed relatively closely by the poultryman if best results are to be obtained, since the mash mixtures are formulated on this basis.

Calcium Needed

In all cases where mash-grain systems are used, it is necessary to supply a source of supplemental calcium, usually supplied by free-choice feeding of calcium grit or oyster shells. When calcium grit or oyster shells are fed, it is not considered necessary to feed insoluble grit unless a fairly large quantity of high-fiber ingredients, including whole grains, is fed.

Recent studies with turkey breeders have shown the importance of vitamin E and certain antioxidants in breeding rations. Texas workers found that the addition of vitamin E to breeder rations appreciably increased the fertility of turkey eggs. Work from Washington State indicates that either vitamin E or DPPD may be used, although a combination seemed to be slightly more effective.

In rations for breeders, it is important to supply certain critical nutrients at levels not only to insure optimum hatchability but also to provide the chick with a good reserve at hatching time. Several studies have shown the importance of "carry-over" of vitamins from the maternal diet through the egg to the chick and its effect on the early growth and nutritional requirements of the chick or poult.

In addition, Thayer (Oklahoma) has reported that levels of niacin, pantothenic acid, and folic acid higher than that recommended by the National Research Council were needed in high-energy laying-mash rations for maximum egg production and economy of feed conversion.

Antibiotic Feeding

Low-level antibiotic feeding in hens has not yielded consistent results. Several workers have obtained responses while others have not. Higher levels of antibiotics ranging from 50 to 200 grams per ton have been used with considerable effectiveness in improving egg production following disease or other stress conditions.

In a few instances, high levels have been used continuously and shown to improve the results, although it is not normally considered economically sound to follow continuous high-level feeding. High levels for short periods following stress appear particularly valuable in restoring feed intake.

For reference purpose, Table 4 includes suggested minimum nutrient levels for use in practical rations for laying and breeding hens and turkeys. These levels in most cases are higher than those considered minimal by the National Research Council. The reason for this is primarily to provide adequate safety margins so that feeds will be suitable for practical use.

TO ADD STORAGE

HAMPTON, IOWA — A concrete grain storage elevator will be built here by the Hampton Farmers Cooperative Co. The structure, it is planned, will have a capacity of from 200,000 to 250,000 bu.

EXPELLER SOYBEAN MEAL & CAKE
45% Protein—5% Natural Fat
GUARANTEED
No adulterations • Clean
Nutritious • Palatable • Fragrant
A Dependable Supply
Truckloads or Cars
COSHOCTON FARMERS EXCHANGE COMPANY
Coshocton, Ohio

Texas Poultry Short Course Scheduled

COLLEGE STATION, TEXAS — A poultry short course to train flock selecting and pullorum testing agents that operate under the National Poultry Improvement Plan will be held at Texas A&M College June 4-8.

Prof. E. D. Parnell, F. E. 249, College Station, is in charge of the course.

WISCONSIN CHANGE

BRUCE, WIS.—The Farmers Feed Mill, Inc., here is now under the ownership of Willard Mertz and Harry Bonek.

ADDS MOBILE UNIT

NORTHFIELD, MINN. — Stanley Little has added a new mobile grinding and mixing unit to his Purina feed service.

STREP-DUST
- Micro-milled Dihydrostreptomycin Sulfate.
- Simply dust over heads of birds by using in an ordinary garden duster.
- Particularly effective with CRD outbreaks in broiler flocks.
- Each bottle treats 1000 birds, contains 47 grams Dihydrostreptomycin Sulfate base.
- May be provided under private label.

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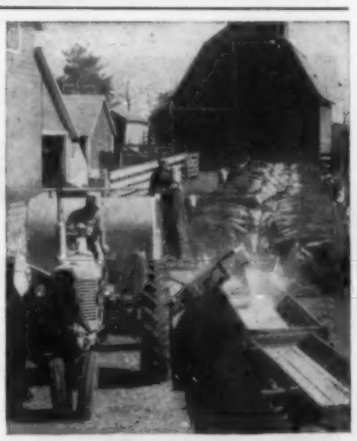
Lilly **REPORT TO CATTLE FEEDERS**

One year of 'Stilbosol' ...what has it meant to you?

If you are one of the many thousands of cattle feeders who have fed 'Stilbosol'-fortified supplements, and have gotten typical results from the addition of this new gain-booster to your rations, here's what it has meant to you . . .



Your cattle put on approximately 20% more beef over the same feeding period than before you included 'Stilbosol' in your rations. This was accomplished without change in your usual method of handling cattle.

You've gotten those extra gains at about 11% lower feed cost. This together with your extra gains has brought you an average return of about $10 for each dollar invested to include 'Stilbosol' in your rations.

You've probably discovered that the main advantage of 'Stilbosol' lies in getting more beef to market at *less* cost in the same number of days on feed . . . not in shortening the feeding period for your market cattle.

Better use of protein. Judging from reports of sharply increased use of protein supplements, the addition of 'Stilbosol' has encouraged many feeders to use protein supplements for the first time, or to feed adequate amounts for best results.

Cattle feeders more nutrition conscious. Perhaps one of the most important, if less spectacular effects of 'Stilbosol' on cattle feeding is the vivid proof it gave of the importance of even tiny amounts of certain substances in the ration. 'Stilbosol' seems to have made many cattle feeders more convinced of the dollar and cents value of good feeding practices.

'Stilbosol' works best with good rations. The feeders who got the best results from 'Stilbosol' were those who added it to an already good, balanced ration. The most disappointed were those who tried to use 'Stilbosol' as a short cut with deficient rations. 'Stilbosol' has not changed basic feeding methods or basic rations. In fact, it has re-emphasized the need for sound nutrition by pointing up the value of essential nutrients to take advantage of the faster, more efficient gains.

How will you use 'Stilbosol' in 1956? Around 6,000,000 cattle were 'Stilbosol'-fed in 1955. Good money-making results from 'Stilbosol' mean more will be fed this new additive this year. It looks like 1956 is a year to improve your management and feeding practices even more . . . and your feed supplier who carries 'Stilbosol'-fortified supplements can help. See him now, and get your fattening cattle on 'Stilbosol' right away. He can help you balance your grain and roughage with a good, 'Stilbosol'-fortified supplement.

You've sent cattle to market that graded the same as those that did not receive 'Stilbosol' in their rations.

'Stilbosol' is Eli Lilly and Company's trademark for Diethylstilbestrol Premix. 'Stilbosol' is the only such premix compounded under license from the Iowa State College Research Foundation, Inc.

Stilbosol
(Diethylstilbestrol Premix, Lilly)
Lilly

ELI LILLY AND COMPANY • AGRICULTURAL PRODUCTS DIVISION • INDIANAPOLIS 6, INDIANA

Broiler Council Prepares Plans For Spring Push

RICHMOND, VA.—Final plans are being drawn for a major nationwide spring advertising and sales promotion campaign featuring the theme, "It's Cook Out Time With Barbecued Broilers," officials of the National Broiler Council, industry advertising and sales promotion organization, report.

Page advertisements in Life and Colliers will lead off the campaign which will also be backed by the industry members' advertising and merchandising.

Some six related food advertisers will tie in with the theme, according to Chas. Vantress, Duluth, Ga., chairman of the organization's program committee, and the combination advertising will present a nationwide promotion with strong selling power in major magazines, newspapers, radio and television.

Point of purchase material is being prepared to supplement the sales promotion, according to Frank Frazier, executive vice president of the council, and will be distributed through the council, by member firms, and by related advertisers.

The campaign is scheduled to begin in early May and will carry through the opening months of summer to cover the time when families over the nation begin their move to outdoor living and eating.

The full scale advertising and selling campaign was approved recently by the council's board of directors, representing all major broiler production areas in the nation and all phases of the industry.

During the meeting of the directors, held in New Orleans, the group reviewed the progress of the National Broiler Council, and noted that areas representing some 50% of all broiler production were participating in the group's permanent financing plan.

Plans were worked out during the session to hold meetings in those areas not now participating in the financing plan so that the National Broiler Council program could be fully explained to industry members. The directors urged that the full financing program be completed before the end of the year so that plans for full-scale promotions could be organized and carried out on a scale urged by members of the industry.

PERSONAL SERVICE AT NO EXTRA COST
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Use
BIO-PABST B 333
with Bacitracin

Only "highly specific" antibiotic with NO REPORTED DEVELOPMENT OF RESISTANT BACTERIAL STRAINS!

CHECK THE PERFORMANCE OF BIO-PABST B 333 WITH THE 4 OTHER LEADING ANTIBIOTICS

	BACITRACIN	ANTIBIOTIC A	ANTIBIOTIC B	ANTIBIOTIC C	ANTIBIOTIC D
Is Not Known to Cause Development of Resistant Strains.	Yes	No	No	No	No
Has High Specificity Against Undesirable Organisms.	Yes	Yes	No	No	No
Does Not Favor Growth of Harmful Yeasts and Fungi.	Yes	Yes	No	No	No
Does Not Affect Growth of Useful Intestinal Bacteria.	Yes	Yes	No	No	No
Does Not Favor Growth of Undesirable Minor Intestinal Bacteria (such as *Proteus* and *Pseudomonas*)	Yes	Yes	No	No	No

Bio-Pabst B 333, guaranteed to contain 33.3 grams of water soluble Bacitracin per pound, is the most effective, most economical antibiotic protection money can buy. Not one case of developed resistant bacteria has ever been reported!

Because it has high specificity against undesirable organisms, Bio-Pabst B 333 is desirable as an antibiotic supplement at all feeding levels and for both swine and poultry.

In poultry, Bio-Pabst B 333 offers high effectiveness against such diseases as: Chronic Respiratory Disease (CRD) (Air Sac), Blue Comb Disease (Pullet Disease, Mud Fever, Non-Specific Enteritis), and Infectious Sinusitis. It is also effective in the control of miscellaneous secondary infections and for maintenance of feed consumption. Bio-Pabst B 333 has been proved highly effective against Swine Enteritis.

Extensive tests under a wide variety of conditions and uses has proved again and again that Bio-Pabst B 333 provides fast eradication of diseases and quickly returns stock to normal feeding.

For more information on how Bio-Pabst B 333 can help you, and for data on Nutri-Pabsts, Ribo-Pabsts and Vita-Pabsts, write,

PABST BREWING COMPANY
Animal Feed Department S-2
Milwaukee, Wisconsin

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900 Wilshire Boulevard
Los Angeles 17, California
Phone: MUtual 1371

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Portland 9, Oregon
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502 S. Front Street
Mankato, Minnesota
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BIO-PABST B 333

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Illinois Feed and Nutrition Conference Scheduled for April 19

URBANA, ILL.—The fourth annual Illinois Feed & Nutrition Conference has been scheduled for April 19 on the Urbana campus of the University of Illinois, according to Dr. John H. Byers, dairy science department, University of Illinois, chairman of the event.

Others on the planning committee from the university include: Dr. D. E. Becker, Dr. R. E. Brown, Dr. H. H. Draper, Dr. E. E. Hatfield and Dr. H. M. Scott.

Topics to be covered include the following: "Animal Nutrition as Related to Meat Quality"; "Beef Cattle," general discussion; "Beef Cattle Nutrition"; "Roamin' in the Rumen"; "Poultry," general discussion; "Swine," general discussion, and "Feeding Suckling Pigs and Forming Pig Starters."

It has also been suggested that, in addition to the principal speaker for each commodity group, spot studies of recent research in the different departments be presented. Some of the studies suggested are: Vitamin E studies; pelleting of feeds; pelleting of alfalfa hay for calves; tracer studies in animal nutrition; biuret as a non-protein nitrogen source for sheep; energy and protein relationship with regard to poultry; parakeratosis; new liquid warmers, and phenothiazine.

California Reports on Khapra Beetle Fight

SACRAMENTO, CAL.—California has spent $600,000 in an effort to eradicate the khapra beetle, it was reported recently by the California Bureau of Entomology.

The report says that the beetle is suspected of having come into the state in 1946. But it was not until 1953 that it was identified as a storage pest.

Out of the 20,000 premises inspected, only 209 were found to harbor the beetle, according to the report. Over one third of all known infestations, representing over two thirds of total cubic content, have received treatment and have been removed from the infested list. Priority treatment was extended to those premises termed distribution center, that is, warehouses and feed mills, in order to reduce possible spread.

The use of methyl bromide has proven effective in the fumigation of feed grains, both sacked and bulk storage, the agency reports. However, this fumigant has presented a problem when used on planting seed. Studies are under way to determine tolerances which will not destroy germination.

The $600,000 spent on the khapra beetle represents less than one fourth of 1% of the annual farm value of the major crops being protected, the report says. If accepted as an established pest, a 1% loss would then equal over $2 million a year, it was pointed out.

ELEVATOR STARTED

SIBLEY, IOWA—Work has started on a new $200,000 concrete grain elevator by the Farmers Cooperative Elevator here.

SNOW WHITE
OYSTER SHELL
Best For Your Chickens
• SOFTER • WHITER
• PURER • RIGHTER
WHITE SHELL
CORPORATION
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INCREASE YOUR PROFITS WITH KELLY DUPLEX

DEPENDABLE MILL EQUIPMENT

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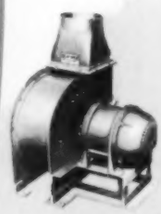
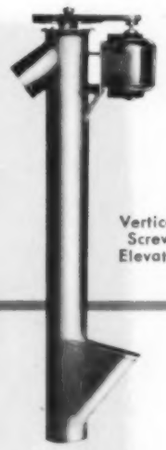


Grain Blower & Exhaust Fan

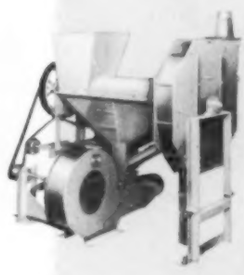


Vertical Screw Elevator

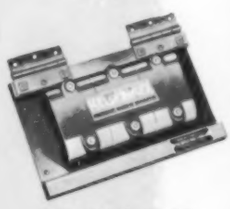
Cob Crusher for making Poultry Litter

Corn Cutter and Grader with Aspirator

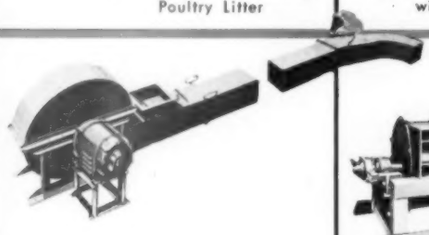
Vertical Feed Mixer ½ to 5 tons



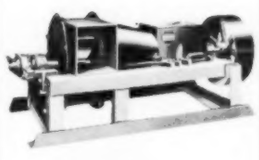
Corn Sheller with blowers for grain and cobs



Magnetic Separator protects mill machinery



Forced Air Carloader with motor or belt drive

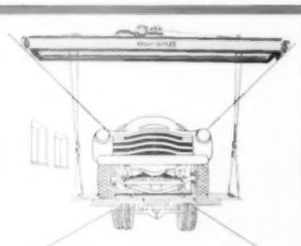


Regular and Pitless Corn Shellers

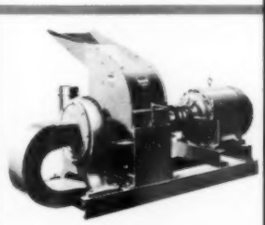
Twin Molasses Mixer

Corn Scalper with or without air cleaner

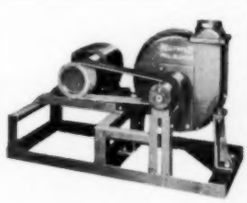
Chain Drag in double and single geared types



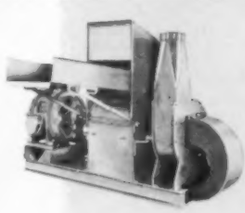
Electric Truck Hoist cuts handling costs



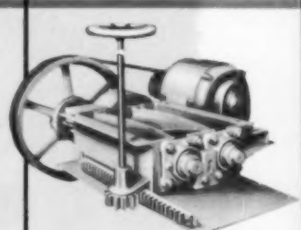
Model "M" Hammermill with direct connected motor



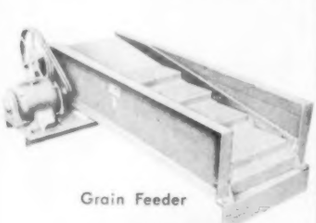
Attrition Mill Blowers for any size plant



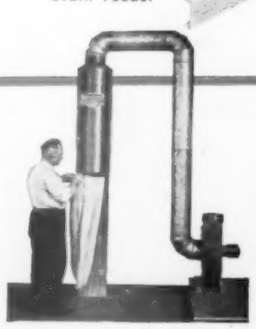
Model "S" Wide Throat Hammermill



Corn Crusher and Feed Regulator



Grain Feeder



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We will gladly ship you any Kelly Duplex machine on approval. If it is not completely satisfactory, you are free to return it within 30 days after arrival at destination, by prepaid freight, for refund of full purchase price. In addition, each Kelly Duplex is guaranteed against defects in material and workmanship for 90 days.

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Check Here!

- ☐ Vertical Feed Mixer
- ☐ Model "S" Hammermill
- ☐ Model "M" Hammermill
- ☐ Vertical Screw Elevator
- ☐ Cob Crusher
- ☐ Corn Cutter and Grader
- ☐ Electric Truck Hoist
- ☐ Corn Sheller with Blowers
- ☐ Regular Corn Sheller
- ☐ Pitless Corn Sheller
- ☐ Magnetic Separator
- ☐ Forced Air Carloader
- ☐ Corn Scalper
- ☐ Chain Drag
- ☐ Attrition Mill Blower
- ☐ Corn Crusher-Regulator
- ☐ Grain Feeder
- ☐ Grain Blower
- ☐ Twin Molasses Mixer
- ☐ Electric Bag Cleaner
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The KELLY-DUPLEX feed mixer is Made to Order...

for YOU-

Yes, Kelly Duplex Mixers are truly "tailor made" to your needs. If you doubt it, just take a look at these advantages: (1) a complete batch can be loaded, mixed and sacked in less than 15 minutes (2) mixtures are so evenly and thoroughly blended that they will stand up under the most rigid inspection (3) unconditionally guaranteed to mix more feed with the same power than any other machine on the market (4) practically noiseless in operation (5) ruggedly constructed of all-welded steel for steady, dependable performance . . . less maintenance . . . longer life (6) so liberally rated that users report it will hold up to twice its rated capacity.

for YOUR MILL

No mill problem is too great for a Kelly Duplex Mixer. Capacities can range from ½ to 5 tons and larger . . . units can be powered by electric motor or belt drive from either above or below the floor . . . and as for space problems—well, just take a look at the pictures on the right. A 2½ ton mixer had to be built with a special extension for discharge into a bagging scale on the first floor. Kelly Duplex planning solved this problem . . . and can solve yours just as well.

MAIL Card today for complete information

● *Remember, any way you look at it . . . Kelly Duplex Feed Mixers are your best buy.*

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PERMIT NO. 72
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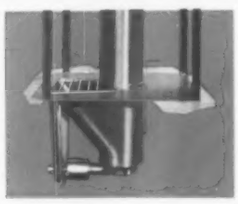
Choice of 4 different drives

Motor drive below floor

Motor drive above floor

Belt drive above floor



Belt drive below floor

Plan Now for Employees' Vacations

By JACK E. BEDFORD

Vacations are one of the main spark plugs for producing more sales volume and profits for a feed store. No one would have this system of the annual two-week holiday eliminated, but at times some feed dealers do wish that the trouble it causes could be erased.

Unless the vacation schedule is carefully planned trouble may develop. Employees will want to make last minute changes and adjusting and re-adjusting take time and lead to worry. Some of the employees will be dissatisfied. And, in general the vacation schedule may be a major management problem.

Here is a seven-point vacation scheduling program that can improve labor relations, make work easier, save a lot of time and produce profit benefits.

Start Scheduling Early

Early planning eliminates the last minute rush and gives plenty of time to iron out any difficulties that may develop. Some feed dealers neglect this early work, feeling that in the final days of pre-vacation time they can whip the vacation schedule into shape. If this is done, it is often necessary to whip the employees into accepting the program.

If planned early enough, the employees' families can make their plans accordingly. This early planning also provides plenty of time to review and correct the schedule if any complications develop before the final posting. Then, too, employees appreciate the opportunity to make plans early.

Establish A Time Limit

If the vacation period is to run from April through September, this point should be included in the vacation policy. Most feed dealers find it best to set the time so that vacations do not fall during the heaviest seasons of the year. They select months when sales and activity are at a low point.

When it is necessary to have the entire crew available during the vacation period, this should be determined early. In some areas special celebrations take place that require a full staff to handle the extra business. Mid-year inventory, if taken, might be another time not to schedule vacations. If some unusual condition exists in your business, it is wise to make plans in advance to avoid trouble.

Establish Vacation Rules

If some special rules will apply during the vacation period, it is recommended by most feed dealers to set these rules up at the time the vacation schedule is posted. One major question is the time the vacation schedule is to run. Another is pay—when and how much. If late returning from vacation, how much are the employees docked? Even though these rules are a part of the general vacation policy, it is advisable to post them again as a refresher.

When your advance planning is on a tight schedule, you may find that the late returning vacationer upsets the routine. In some organizations the employees are docked double for returning late. This policy will usually bring the employees back on time.

Let Employees Select Time

The time factor is the point that can turn dissatisfaction into happiness about employees' vacations. It gives the employees the freedom of choice and saves a feed dealer plenty of time and trouble. The notice is posted for the vacation period and the general rules that will apply. Space is provided on the notice for the employees to sign up for the time they prefer.

Some of the employees will pick out the most favored times—those with long week-ends. If no conflicts arise, they are allowed to have the time first selected. Many feed dealers settle any conflicts on time with the seniority rule. This gives the employees the feeling that if they continue to work for the feed dealer, their loyal service will be rewarded.

To be sure that customer service is not interrupted by the vacation schedule, you will want to check every selection carefully. The general vacation rules might well include the rule that not more than one employee

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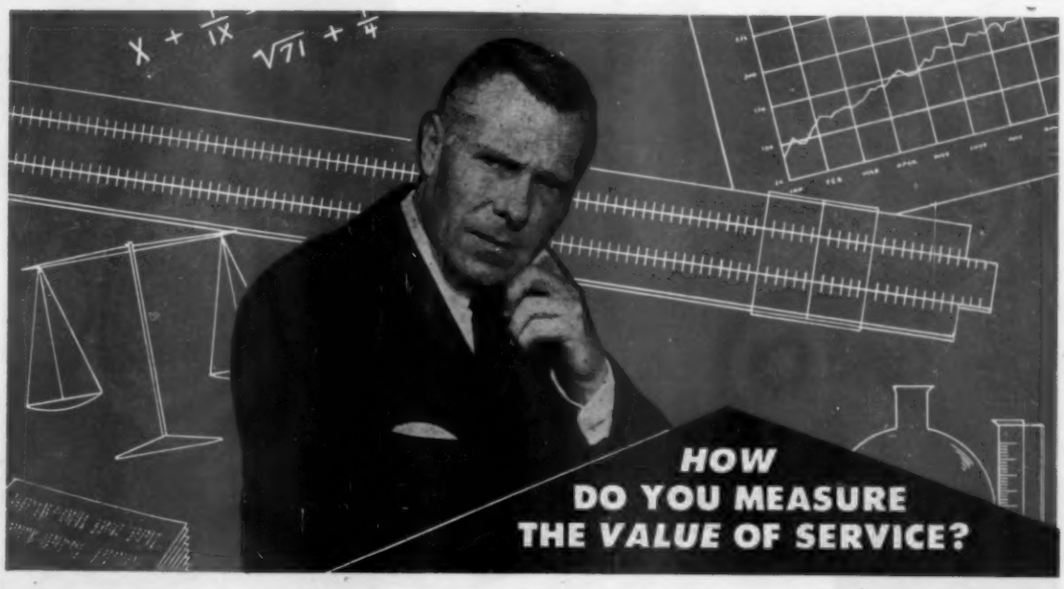

"SPECIAL" Services are *Standard* for DAWE'S VITAMELK Users

It's difficult to "weigh an intangible". The value of dependability and extra service is hard to measure in terms of dollars and cents. Probably the best standard of measure is the *value of your own time*. For example, how much *more* could you accomplish with more of your time free to concentrate on increasing *sales*—your primary responsibility?

Keeping up-to-date with the constantly changing developments in nutrition and feed formulation, in itself, is too big a job for any individual—even if he could devote full-time effort to it. When you try to take on this all-important technical end of your business as a "side-line", both sales and production are bound to suffer.

Here's the alternative:

Delegate to Dawe's the responsibility for the evaluation and application of new nutritional developments to your feeds by programming your business the Vitamelk way. Your own time is left free for sales, planning and other vital management work.

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Dawe's nutritionists work with you every step of the way in the over-all planning of a complete personalized nutritional program for you. Specialists from Dawe's Quality Control Laboratory, Chemical and Biological Laboratories, Nutrition Research Department and Farm Research Station are available to assist you on any research, formula or fortification problem. You get real teamwork.

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from any phase of the operation be away at one time. This, coupled with the fact that no two "key" employees can be away at the same time, will provide good customer service throughout vacations.

If it is necessary to employ extra help during the vacation period, coverage is important. It is much easier to hire a good extra employee on a semi-permanent basis. For instance, it is easier to get a replacement worker for the complete vacation period than it is to have a man for a couple of weeks, lay him off for the next two, and then use him again for two weeks.

Even though the special favors granted may seem unimportant at the time, they often have long term implications. Nothing can injure good employee relations faster than the feeling that some individual or group in the firm is being given a preference.

Whenever any adjustments are made after the employees have selected the time they want their vacation, this should be on a fair and equitable basis. Rules, if followed, will eliminate almost all misunderstandings that can develop. Favoritism will do more to wreck a good personnel policy than all the bonus and retirement plans or other fringe benefits can ever build up in an organization.

In the past few years there has been a trend to schedule some of the vacations during the winter months. This helps ease the drain of help during the summer months, and it gives the employees an opportunity for a vacation at a different time of year.

One feed dealer reported that by offering the regular two weeks vacation period during the slow months and giving the employees the opportunity to take extra time at no pay, the employees eagerly sought these dates. Two of the employees took off a full month and came back full of enthusiasm for the job.

It is hard to keep an employee away from his type of business. But, if he is far enough away from his own feed store, he will visit other feed stores and see how they are handling problems. This chance for development of new ideas is helpful for increasing interest and efficiency when the employees return from their vacations.

Gripes and complaints about the vacation schedule can be cut to a minimum by planning vacation schedules in advance, giving the employees a voice at the time for their own vacation and settling all disputes or conflicts in a fair and equitable manner. In this way you can get full use from the vacation spark plug for your feed business.

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Red Meat Production Hit New High in '55

WASHINGTON — Red meat production in 1955 totaled 25,515 million pounds, establishing a new yearly record which was 7% above the previous record high of 23,805 million pounds produced in 1954, according to the livestock slaughter and meat production report issued by the U.S. Department of Agriculture.

Comparing 1955 with 1954, beef production was up 5%, pork production was up 13% and mutton and lamb output was up 4%. Production of veal was down 4%. Lard production was up 16%.

Beef accounted for 52% of the total red meat production in 1955, USDA reports, compared with 53% in 1954. Pork comprised 39% of all red meat produced during 1955 compared with 37% a year earlier.

Commercial livestock slaughter plants produced 2,430 million pounds of meat during December. This was 1% more than the November output and 7% above December production a year earlier, USDA reports.

December beef production at 1,116 million pounds was 2% less than November, but 4% more than the same month a year earlier. Pork production during the month was estimated by USDA at 1,140 million pounds, 6% above a month before and 13% above the same month a year earlier.

Beef production during 1955 totaled 13,225 million pounds, the highest annual output of record. The average live weight of slaughter cattle was 940 lb., compared with 926 lb. in 1954.

Pork production during 1955 totaled 10,056 million pounds. The number of hogs killed in 1955 was 15% greater than a year before, and the average live weight of hogs during the year was 237 lb., compared with 240 lb. the year before.

Production of mutton and lamb during 1955 was 747 million pounds, with slaughter sheep and lambs averaging 96 lb. compared with 95 lb. the year before. Poultry meat output totaled 4,143 million pounds ready-to-cook basis, 2% less than in 1954.

DOW CHEMICAL DIVIDEND

MIDLAND, MICH.—The board of directors of the Dow Chemical Co. has declared a dividend of 25¢ per share on its common stock payable April 13, to stockholders of record at the close of business March 23.

VALUE and QUALITY

These two members of the Spencer Kellogg team have in mind quite different ideas as they look at samples of flaxseed at the Minneapolis Board of Trade.

Howard Scheu, seed buyer, is concerned with the value of flaxseed on the commodity market. This is his problem: we must obtain first-class seed under conditions that permit it to be processed and sold on terms attractive to our customers.

David Atlas, works manager of the Minneapolis Mill, is interested in the basic properties of the seed itself and its contribution to the quality of SPENCER KELLOGG'S OLD PROCESS LINSEED OIL MEAL.

For the feeder who wants the finest conditioner there is no replacement for SPENCER KELLOGG'S OLD PROCESS (expeller) linseed oil meal with not less than 3½% of the natural fat left in. Its famous quality is the result of the team work of many experienced people such as Mr. Scheu and Mr. Atlas, as well as the best seed and the surest control of quality in processing.

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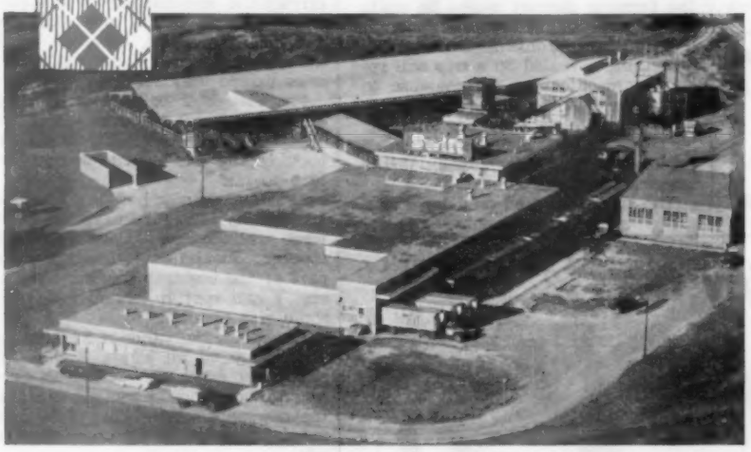

Swift's large output of animal proteins makes it possible to choose only the very best—for you.

Vegetable protein concentrates that can produce extra results per dollar are available from Swift's own oil mills.

In modern feed mills, Swift blends THE PICK OF THE PROTEINS with other fast-growth ingredients. CALOGEN®, for example, is a *new* energy ingredient that helps farmers get more from every pound of feed.

1. **New results in your own feeds.** With Swift's new Pow-R-Pac Base Formulas and sound nutrition counsel, your feeds can take a quality step to top position in your market.

2. **A national brand line with a name that's known.** Farmers and feeders pay attention when you talk, and advertise, "You get the Pick of the Proteins—from Swift."

3. **Complete line of popular specialty feeds.** Consider the possibilities of one quality line including three calf foods, a milk replacer for pigs, a sweet starter pellet for pigs, a booster feed for poultry and a complete line of seven popular-priced minerals.

4. **Mill planning counsel for new efficiency.** Swift's mill planning consultant service may remove some of the cost and labor out of your present feed mixing and handling.

5. **Feed financing programs.** Swift can help equip you with the new tools to go after the big customers, the good ones you've always wanted.

6. **Marketing assistance.** In many localities Swift can provide possible marketing assistance on your customers' livestock or poultry.

7. **Thorough merchandising program of your own.** Swift supplies you tested advertising, mailings, display ideas and materials, live programs for producer meetings.

8. **A protein lift for your feeds.** Swift's Animal Proteins are entirely packing house products, thoroughly processed.

With support and facilities like these behind you, the feed business points one way—upward. Specify how many of these opportunities you'd like to discuss with our district manager nearest you. Write us today.

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Advertising, Personal Contact Help Build Trade for New Mexico Dealer

Ben Slaughter of Hobbs, N.M., had never operated a business of his own. Yet, two years after buying a farm supply store, he had increased sales by 300%. His Slaughter's Feed & Supply was selling feed to ranchers and garden supplies to the town residents.

All that time there was a growing number of new irrigation farmers he hadn't been able to reach. The reason was simple. They came to Hobbs for groceries and other supplies, but for farm implements, parts, insecticides and fertilizers they had been going to a neighboring town.

"That farm trade was looming bigger and bigger all the time," said Mr. Slaughter. "I decided the best thing to do was to get acquainted with those farmers."

He not only went to the farms and talked to the men on their tractors or visited them in their homes, but he carried along sacks of fertilizer and insecticides in the small truck he drove.

The farmers liked this young business man. They made inquiries among the ranchers and found out he had an up-and-coming business. Before long a few started to drift into the store, then more.

Mr. Slaughter has some definite ideas on running a business and finds that they pay off in more sales and an increasing number of new customers.

He believes in personal contact, and still makes those trips out into the farming district where he visits with dozens of farmers and tries to find out their problems. Occasionally something revealed on a trip will result in his stocking merchandise to overcome a particular problem.

In his store he practices unfailing courtesy. No purchase is too small for him to handle personally if the customer requests it.

This dealer worked on a farm as a boy, but then became a private secretary and auditor for a large oil company. This business training is invaluable now. He has the store arranged neatly by departments with plenty of signs to show the customer the various kinds of merchandise and price.

Many times when there is only one employee in the store, he can wait on several dozen customers an hour. They can see what they want, and most of them bring the merchandise to the cash register and pay for it. If it is in large quantities, the clerk writes out the order, and a truck carries the merchandise to the customer's farm. Since most farmers own pick-up trucks, however, he is not called upon to make any deliveries except very large ones.

Mr. Slaughter believes in keeping a meticulous set of books. After his experience as an auditor, careful bookkeeping has become second nature to him.

"I know exactly how my business stands," he said. "We have week-by-week records on sales, overhead, costs, credit and advertising. If some part of the business structure weakens, I can spot it instantly and do something about it."

He knows the value of advertising and has tried all kinds. Radio and newspaper advertising are both fine, he said, but special announcements in the newspapers will bring more new people into the store than routine ads.

Another form of advertising he likes is his bulletin board. Besides the regular blackboard where items are listed and priced, he has a special one for farmers' use only. On this board his customers can advertise anything they want without charge. If a man has a second-hand fertilizer spreader for sale, he lists it on the blackboard. Sometimes an irrigation laborer needs a job. If so, he can state his case on the blackboard. When people come to the store, the first thing they look for is that announcement board.

"It's almost like a small town newspaper," Mr. Slaughter smiled.

Mr. Slaughter realizes that farming has gone scientific. For this reason he works with the county agricultural agents, pumps questions at the suppliers' representatives and tries to stay abreast of the latest developments.

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Purina Scholarship Details Announced

ST. LOUIS — Details of the 1956-57 Ralston Purina Scholarship Program were announced by J. D. Sykes, vice president of the feed milling company. One scholarship will be available annually in each state and three in Canada to be awarded to an incoming senior in the college of agriculture of the land grant college.

Qualifications include (1) scholastically in the upper 25% of class, (2) leadership as evidenced by special activities in which he is engaged, (3) moral firmness and vigor in all of his relationships, (4) a record demonstrating good citizenship, (5) sincerity of purpose in agriculture as his chosen field, and (6) financial aid clearly demonstrated.

Each scholarship is for $500 and all correspondence and recommendations are to be directed to Mr. Sykes in care of the Ralston Purina Co., St. Louis, Mo.

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Vitadine BUFF Label

Blatchford's regular Vitadine—also known as VD-20. A complete fortifier containing all vitamins and rare minerals needed for egg and breeder feeds.

NEW Vitadine GREEN Label

A new *intermediate growth* Vitadine for all poultry feeds where good growth is desired, but maximum growth is not of primary importance. Vitadine GREEN Label is the same as the former Vitadine Plus, except it does not contain Arsanilic Acid or Vigofac.

Vitadine ORANGE Label

Fortifier for *maximum* growth in poultry, broiler and turkey feeds. Vitadine ORANGE Label contains maximum levels of vitamins, rare minerals, B_{12}, Antibiotics . . . plus Arsanilic Acid and VIGOFAC.

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A complete fortifier that enables you, with just one 50 lb. bag . . . one simple mixing operation, to completely fortify one ton of 40% hog concentrate.

DEMON BRAND OATS can be ordered from the Des Moines plant with Blatchford's Vitadine, Swinex or Calf Feeds, to make up a car.

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2 Show the bags to a number of people—your customers, your salesmen, your banker, *anyone*—and ask them to pick out the bags with the *better printing* of your brand.

Try the test. Convince yourself.

Bemis BEMIS BRO. BAG CO.

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Don't Overpay Your Taxes

EDITOR'S NOTE: This article is based on information supplied by the American Institute of Accountants, the national professional organization of certified public accountants.

Whether the federal income tax rates are cut or not, you may be able to cut your own tax bill—honestly!

To do this you need to know the tax effect of various choices. Your choice of a method of handling a particular transaction can raise or lower your taxes, and sometimes you can save money by a legitimate shift of taxable income or deductions from one year to another. You are also allowed choices in your treatment of certain items in your tax return, such as depreciation and research costs.

Many businesses could reduce their tax burden if they were aware of the tax considerations affecting a variety of transactions. The most feasible means for many businesses to keep alert to tax saving opportunities are frequent consultation with a properly qualified advisor. Consultations should be held throughout the year as decisions are made which will affect the tax.

Certain tax-saving steps are still possible at tax-filing time. One of them is the proper choice of depreciation method. The first step is to determine the estimated useful life of any asset acquired during the tax year. Every businessman should have a copy of "Bulletin F," which contains tables of "average" useful lives. It is available from the Superintendent of Documents, Government Printing Office, Washington 25, D.C., for 30¢. The tables provide a guide, but it is not necessary to follow them exactly.

The simplest method is straight-line depreciation. It may also be the best in your particular case. Just divide the cost (less what you expect to sell it or trade it in for when it is replaced) by the number of years of estimated useful life, and this is the amount to be deducted each year. In arriving at the original cost, don't forget to include freight and installation charges in addition to the price paid for the equipment.

The law now specifically permits several other methods of depreciation for new assets having a useful life of three years or more. One of them is known as the declining balance method. In the first year the depreciation rate is twice what it would be under the straight-line method. The next year the same rate is applied to the amount remaining to be depreciated. This process is repeated each year.

The result is that a greater proportion of the cost is depreciated during the early years of the life of the asset.

Another new method, known as "sum of the years' digits," has a similar effect. You should figure depreciation on a new asset in all possible ways so that you can decide which is best for you and make the proper choice.

These methods of rapid depreciation may be particularly helpful to a company which is currently making large outlays for new equipment, but the depreciation left for the later years of the asset's life will be less than under the straight-line method. The best method depends upon the circumstances of the individual company, and is also affected by such imponderables as estimates of future earnings and tax rates during the life of the asset.

Research and Development

Another choice confronting the taxpayer is whether to treat research and development costs as immediately deductible expenses or to amortize them over a period of years. The immediate deduction is certainly a "bird in the hand" and may be very attractive to a company which needs this tax benefit to help finance the undertaking.

The company which can afford to spread the cost over the estimated useful life (or at least 60 months if the useful life cannot be determined) may find it best to do so. This is especially likely to be advantageous for companies whose income is expected to increase.

There is a provision in the 1954 Internal Revenue Code which allows some proprietorships and partnerships to be taxed as if they were corporations. This choice should not be made lightly, as there is considerable uncertainty about the provision and the proprietorship or partnership desiring corporate tax treatment might find it better actually to incorporate.

Choice of Fiscal Year

Regulations now permit changes of fiscal year in some cases without permission of the Treasury Department. Generally it is wise to use the fiscal year which corresponds most nearly with the annual cycle of business operations, ending at the low point of receivables, inventories and loans, instead of a calendar year. This reduces the area of possible dispute over such matters as value of inventories, and has many advantages apart from tax considerations. The change should be carefully timed, though, to avoid possible adverse tax effects during the changeover period.

Sickness, Accident Benefits

Under the present tax law, payments from your company to employees for treatment of sickness or injury are not taxed as income of the employees. If the company has a plan for continuing all or part of an employee's pay while he is absent for sickness or injury, limited amounts of this "sick pay" are also tax exempt.

This applies whether the payments are made by the company or by an insurance company. In the case of a sickness requiring hospitalization even for one day during the course of the illness, or in the case of any injury, the first $100 per week of payments are tax free. In the case of sickness which does not require as much as a day's hospitalization, the exemption begins after the first week of absence.

No great formality is regarded concerning the "plan" but it should be

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explained to employees and appropriate records kept of the amounts paid. Proposed regulations governing tax withholding in 1956 from payments to ill employees were still under discussion when this article was prepared.

If you contract for repairs and improvements to your business property, be sure that these two types of work are billed separately. Should you lump them together, you may find that the entire cost has to be capitalized for future depreciation. By listing the cost of repairs as a separate item you are allowed to deduct it as an expense of the current year.

For example, you might have a furnace repaired and new radiators added. By separating the charges you can deduct the cost of the repairs in the current year, although the new radiators would be improvements subject to depreciation during their useful life.

Keeping Good Records

Many deductions are lost through failure to keep adequate business records. Be sure that you have good records to show you what deductible expenses you have had, and to back up your deductions in case they are questioned by the government. This applies particularly to your out-of-pocket business expenses, such as travel and entertainment of customers, and to items which are deductible on your personal income tax return.

Good records and properly qualified professional tax assistance—at tax-filing time and throughout the year—are the keys to income tax savings.

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'55 Production of Dry Buttermilk Up; Skim Output Down

WASHINGTON — Dry buttermilk production for animal feed during 1955 increased 4% over the 1954 output, but dry skim milk production was 13% less than the previous year.

According to the U.S. Department of Agriculture, the 1955 total of dry buttermilk was 58,350,000 lb. Dry skim milk production totaled 16,510,000 lb.

During December the dry buttermilk production was 4,350,000 lb., 10% more than a year earlier and 27% higher than the 1949-53 average. Production of dry skim milk during December was 1,050,000 lb., down 18% from a year earlier and 4% under the five-year average.

Stocks of dry skim milk for animal feed on Dec. 31 totaled 1,120,000 lb., USDA reports, 97% more than a year earlier, although 29% less than the average for that date. Dry buttermilk stocks totaled 4,264,000 lb., up 47% from a year earlier and down 42% from the Dec. 31 average.

Selling prices of dry skim milk in December averaged 10.08¢ lb., an increase of 0.2¢ and 0.5¢, respectively, from the preceding month and a year earlier. The average price during 1955 was 10.37¢ lb., 0.9¢ more than for the previous year.

Combining both human food and animal feed, the price of dry buttermilk during December averaged 12.95¢ lb., less than 0.1¢ above the preceding month and 1¢ more than a year earlier. The 1955 average price, according to USDA, was 12.59¢ lb., 1.3¢ higher than for 1954.

USDA purchases of nonfat dry milk solids for price support purposes in January through Jan. 25 totaled 36,668,000 lb. December purchases totaled 45,829 000 lb., while for the marketing year beginning April 1, 1955, through Jan. 25. purchases totaled 484,494,000 lb. USDA says it held no uncommitted supplies of nonfat dry milk solids on Jan. 25.

Sales of nonfat dry milk solids for animal and poultry feed in January through Jan. 25 totaled 650.000 lb. In December, sales totaled 463 000 lb. And from April 1 through Jan. 25, the department sold 11,623,000 lb.

FLOOR SPACE

Each pullet needs at least 3 sq. ft. of floor space in the laying house, according to poultrymen at North Dakota Agricultural College.

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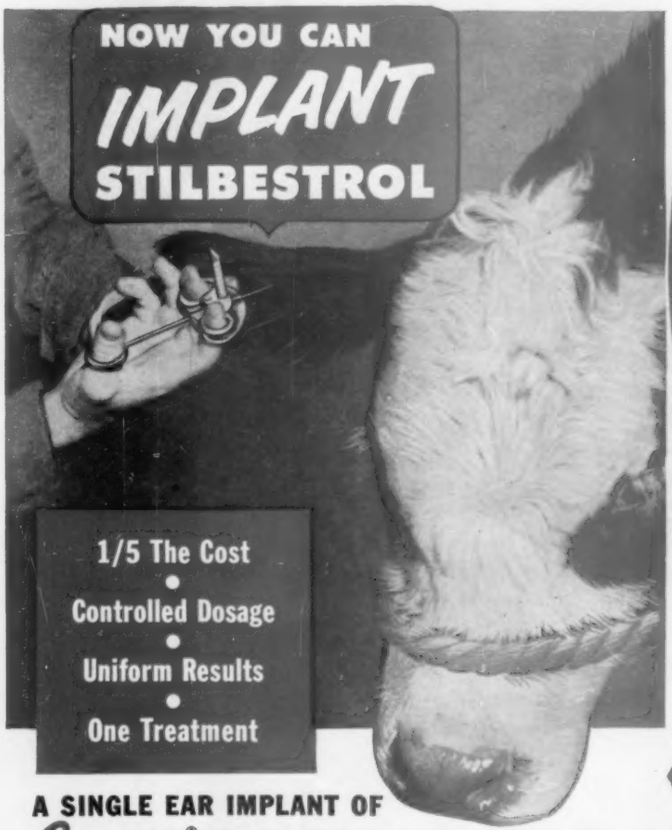

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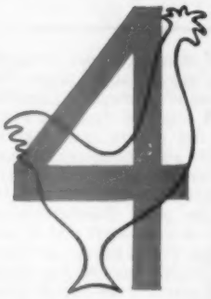

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Mississippi Dairy Research

Three Levels of Feeding Studied

The concentrate or grain mixture makes up one of the largest single items in the cost of milk production. The most widely accepted method of determining concentrate allowance is the "thumb rule": 1 lb. of grain for each 3 lb. of milk for the high testing breeds and 1 lb. for each 4½ lb. for the low testing breeds. A recent survey and the yearly testing reports of the Mississippi Dairy Herd Improvement Associations indicate that the average Mississippi dairyman feeds at the rate of about 1 lb. of grain for each 2 lb. of milk produced.

There have been reports that the level of concentrate feeding can be lowered without a serious drop in milk production. Experiments in New Jersey indicated that it was more economical to feed 1 lb. of concentrates for each 6 lb. of 4% milk than the pound for each 3 lb. of milk. Other experiments have given different results. The forage crops used in most of these trials are not widely grown in Mississippi. In all instances the roughage and pastures were of excellent quality.

This trial was conducted by the Mississippi Agricultural Experiment Station to study the effect of different levels of concentrate feeding on efficiency of milk production when fed with Mississippi grown roughages.

Three Feed Ratios

Thirty cows from the college dairy herd were divided into three groups with respect to breed, age, and milk production in the previous lactation period. Each group was fed grain according to one of the following ratios: 1 lb. of concentrates for each 3 lb. of 4% fat corrected milk (1:3), 1 lb. for each 4½ lb. (1:4½) and 1 lb. for each 6 lb. (1:6).

Precautions were taken to insure that the same kind and quality of pasture and roughage were available to all three groups at all times. The roughage was of average to excellent quality and was fed free choice. Roughages fed during this trial included alfalfa and Johnsongrass hay; sorghum, corn and grass silage and a variety of pastures depending on the season of the year. During periods when pastures were short and of poor quality either green soiling or silage was fed in racks. The soiling crops, cut and fed green, were sudan grass, Johnsongrass, red clover or a mixture of Johnsongrass and ladino clover.

Roughage consumption was measured during a 105-day barn feeding period. Daily milk weights for each cow were recorded throughout the complete lactation. Butterfat percentages were determined once each month except during the 105-day barn feeding period when weekly butterfat tests were made. Grain allowances were revised each Saturday on the basis of the production of 4% fat corrected milk for the previous week. The cows were weighed at two-week intervals throughout the year.

One Lactation Completed

This experiment was started in the summer of 1954, and one full lactation has been completed on each cow. Data on milk production, amount and cost of concentrates fed, and value of milk sold are presented in Table 1. In order to avoid the effect of irregular calving intervals following this lactation only the first 270 days of each lactation was included. Three cows failed to complete a normal 270-day lactation. Since there was no reason to suspect that this failure was due to level of grain feeding, all data from these cows were omitted from the summary. For this reason the results reported here are from 10 cows in the 1:3 group, 8 in the 1:4½ group and 9 in the 1:6 group.

Due to the loss of data from three cows the average milk production in the previous lactations of the cows in the three groups was not equal. However, this does not explain the abnormally low production of cows in the 1:4½ group during this test. A study of the lactation curves as shown in Figure 1 indicates that the failure of the 1:4½ group to produce as expected is not entirely a result

EDITOR'S NOTE: The accompanying article is a report from Mississippi State College on an experiment conducted to compare results with dairy cows on three levels of concentrate feeding as related to milk production. The article is from a college publication, Mississippi Farm Research. The authors are J. R. Owen, R. T. Crumpton and J. T. Miles.

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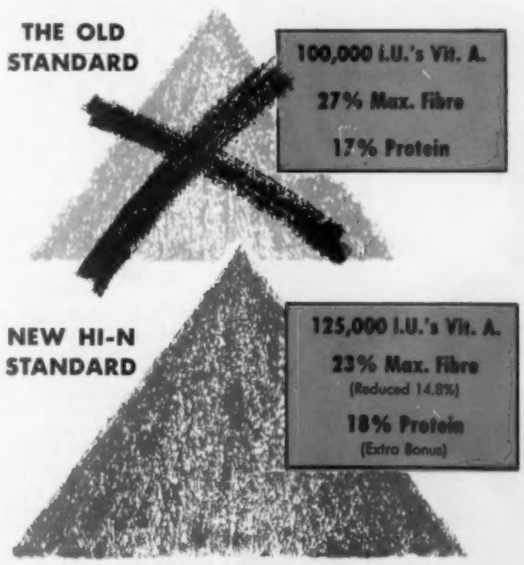

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Table 1—Average Milk Production and Grain Cost Data Per Cow for 270 Days

Ratio, pounds of grain to pounds of milk	1:3	1:4½	1:6
No. of cows	10	8	9
Pounds 4% milk (present lactation)	8,281.4	6,751.6	7,105.4
(previous lactation)	8,754	8,458	8,715
Pounds grain fed	2,752.5	1,548.4	1,350.0
Value of milk produced*	$389.23	$317.32	$333.96
Cost of grain fed**	$ 82.58	$ 46.45	$ 37.50
Net value of milk above cost of grain	$306.65	$270.87	$296.46

*Based on price of $4.70 cwt. **Based on cost of $60 ton.

of the rate of concentrate feeding. The fact that the average production at the start and at the peak of the lactation curve of this group is somewhat lower than either of the other groups indicates that the normal variation in milk production from one lactation to the next is probably the greatest factor in the lower production of this group. The lactation curves of the three groups appear nearly parallel, however in the latter part of the lactation the rate of decline of the 1:3 group is less than the other groups and the decline of the 1:6 group is greater than the 1:4½.

Level of nutrition is known to affect the persistency of lactation. Persistency of milk production of each group calculated at four-week intervals throughout the 270 day lactation is presented in Table 2. These persistency factors are expressed as percentages and were obtained by dividing the total production of 4% milk for a particular week by the production of the second full week of the lactation period.

Table 2—Average Persistency Factors at Four-Week Intervals Expressed in Percentage

Week	Pounds of concentrate per pound of 4% milk 1:3	1:4½	1:6
4	106.12	97.04	100.20
8	95.03	88.55	89.08
12	84.81	84.83	79.73
16	77.85	68.00	68.90
20	68.86	57.11	60.83
24	67.69	55.09	58.30
28	67.77	60.01	59.19
32	61.41	56.73	50.98
36	57.42	49.25	44.89

Most of the cows gained in body weight during the 270-day period. The cows in the 1:3 and 1:4½ groups gained an average of 50 lb. per cow during the period from 4 to 270 days after parturition. The 1:6 group gained an average of 30 lb. per cow in the same period.

The relative time of gain or loss in body weight within the lactation period may be almost as important as the amount of gain or loss. This is true because weight changes in the adult cow are a reflection of the storing and depletion of nutritional reserves within the body. A good producing cow may deplete her body reserves causing a sharp drop in milk to the level supported by her nutrient intake. With the normal decline in milk production as lactation progresses, a point is reached where this same level of nutrition will allow her to gain weight. That the weight changes of these three groups of cows reflect this situation is evident from the graph of bi-weekly weight changes shown in Figure 2. The initial decrease in weight was least for the 1:3 group, intermediate for the 1:4½ group and greatest for the 1:6 group. The gains in weight were in reverse order. The drop in body weights from the 26th to 30th weeks was concurrent with turning on pasture and coincides with a slight increase in milk production as shown in Table 2 and Figure 2.

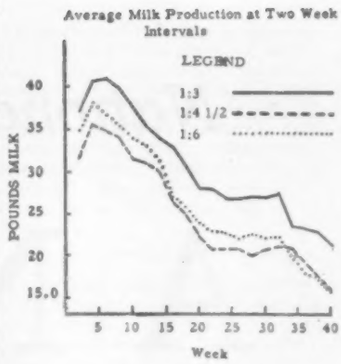


Figure 1

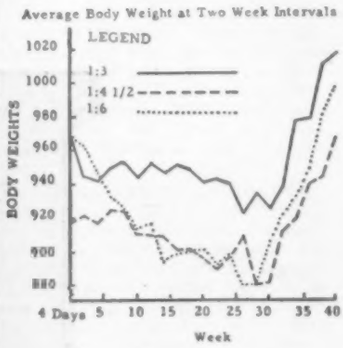


Figure 2

In most other trials a decrease in level of grain feeding has been somewhat compensated for by an increased roughage consumption. During the 105-day barn feeding period the roughage consumption of these cows was measured and calculated to pounds of dry matter consumed per 100 lb. of body weight per day. Expressed in this manner the average consumption of dry matter from roughage was 2.40 lb. per 100 lb. of body weight for the 1:3 group, 2.48 lb. for the 1:4½ group, and 2.36 lb. for the 1:6 group. The small size of these differences and the variation in roughage consumption within groups probably reflect the appetites of individual cows rather than a difference due to level of grain feeding.

Summary

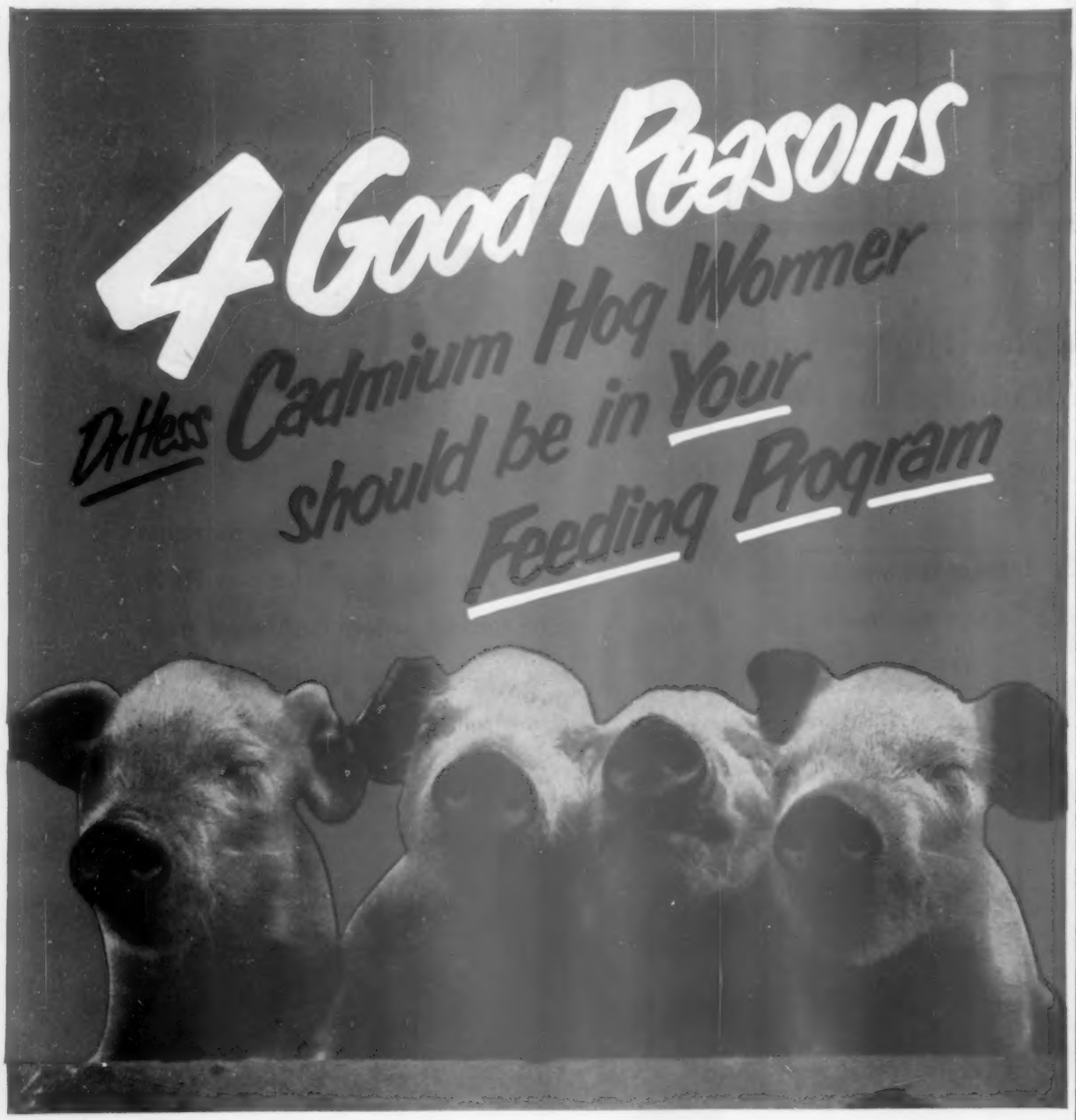
In this experiment, with milk valued at $4.70 per cwt. and concentrates at $60 per ton the 1:3 group returned a greater profit above the cost of concentrates than did the 1:4½ or 1:6 groups (Table 1).

Since most Grade A milk prices range from $4.70 to $5.70 per cwt. of 4% milk and concentrates in general are below $60 per ton, the 1:3 ratio would be most economical for this group of dairymen unless abundant pasture or roughage of very high quality was available.

However, in this study, if milk were valued at $3 per cwt., an average value for manufacturering milk, the 1:6 ratio would have returned $9.80 more income above cost of grain than the 1:3 group.

EQUIPMENT ADDED

BRIDGEWATER, S.D. — The Bridgewater (S.D.) Milling Co. has installed several new pieces of equipment and expanded its line of feed products.



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Pfizer's $20,000 Stock Judging Contest To Be at Kansas City

KANSAS CITY — The fourth annual $20,000 livestock judging contest sponsored by Chas. Pfizer & Co., Inc., will be held this year in Kansas City, in conjunction with the Future Farmers of America annual convention and the American Royal livestock show.

The contest, held the past three years in Chicago during the International Livestock Exposition, will include several new features this year, among them a $1,000 award to a vocational agriculture teacher from each of the four FFA geographical regions across the nation.

FFA members from 48 states and Hawaii will be on hand for finals to be held Oct. 19 in the exhibition hall of the Memorial Auditorium.

Pfizer officials will be host at a luncheon in conjunction with the livestock judging finals.

Invited guests will include national FFA officials, the FFA band and chorus, the board of governors of the American Royal, representatives of leading feed manufacturers and others.

Each of the 49 finalists will have won top honors in his state or territory in preliminary judging. Top prize to each state winner will be $100 each plus an expense-paid trip to Kansas City to compete in the finals. Second place winners in the state contest will be awarded $50 and third place, $25.

The winner in the finals will receive $2,000 first prize money. The runner-up will be given $1,000, third $500, fourth $300 and fifth $200.

In addition, John E. McKeen, Pfizer president, will present $1,000 checks to each of four VoAg teachers, one from each geographical region, who have been judged as making the greatest contributions to the teaching of the fundamentals of livestock judging.

These new awards are in keeping with the contest's over-all purpose—to promote the better breeding and feeding of livestock and poultry.

In another new feature of this year's competition, FFA contestants will be graded on their ability to judge all three types of animals and poultry used in the contest—dairy cows, hogs, laying hens. In the past, contestants have competed in only one classification.

Livestock Group Honors Two Minnesota Men

ST. PAUL, MINN.—Two University of Minnesota Institute of Agriculture department heads have been elected to Minnesota's "Livestock Hall of Fame." They are E. F. Ferrin, head of the animal husbandry department, and J. B. Fitch, head of the dairy department. Their portraits were hung in Peters hall on the St. Paul campus of the University of Minnesota during the annual meeting of the Minnesota Livestock Breeders Assn. Feb. 9.

The selection of Mr. Ferrin and Mr. Fitch was made by the Minnesota Livestock Breeders Assn., a group of 2,600 Minnesota livestock producers. They are the 33rd and 34th men to be selected for the honor since the organization was started in 1905.

Plans Drouth Study

MANHATTAN, KANSAS—An outstanding Dutch meteorologist has been named to the Kansas State College staff to study weather factors which are associated with drouth conditions.

He is Dr. Willem Van Der Byl, who has been on the staff of the Royal Netherlands Meteorological Institute at De Bilt, Holland, for nine years. The RNMI is the counterpart of the U.S. weather bureau.

Guar Beans Find More Use in Texas

VERNON, TEXAS — Livestock feeders in this area have been using guar beans with a good deal of success, according to Frank Duncan of the Soil Conservation Service. Most of the beans are taken to a plant at Odell where they are processed into protein cake and pellets. Also, beans have been sent to Altus, Okla., where they have been processed into guar meal, pellets and cake.

The use of guar gained momentum after successful feeding experiments at the U.S. Department of Agriculture's Great Plains Field Station at Woodward, Okla. Many of the beans grown in this area have been sold to General Mills, Inc., and taken to its processing plant at Kenedy, Texas.

Agriculture authorities said farmers and ranchers in Texas have become interested in feeding guar in place of cottonseed meal. One feed lot operator said he was planning to use guar meal or pellets for his cattle.

Since guar seems to be adapted to the dry, semi-arid climate of west Texas, the authorities said, the acreage in 1956 is expected to almost double that of 1955.

Poultry Science Assn. To Meet Aug. 7-10

COLLEGE STATION, TEXAS—The 45th annual meeting of the Poultry Science Assn. has been scheduled for Aug. 7-10 at North Carolina State College, Raleigh, it has been announced by C. B. Ryan, secretary-treasurer of the association, Texas A&M College, College Station.

FIRM CHANGES HANDS

SEYMOUR, IOWA—The Seymour Produce & Feed firm has been sold by Mr. and Mrs. William R. Wright to the Hughes Produce of Centerville, Iowa.

Morton Salt Announces Product Improvements

CHICAGO—The Morton Salt Co. recently announced two new improvements in its trace-mineralized salt.

"Morton T-M Salt, which is fed to livestock free choice, now has 3-5 Di (diiodosalicylic acid) as its iodine source, replacing the thymol iodide," the announcement said. "Also new is the use of propylene glycol as an anti-segregation and anti-dusting agent, rather than the molasses formerly used for these purposes."

"The 3-5 Di gives trace mineralized salt a continuing high level of iodine, weathers better and provides iodine in a form easier for the animal to utilize."

The company said propylene glycol was substituted for molasses after tests showed that it held trace minerals more evenly distributed through the salt. It also prevents dusting and caking of the salt.

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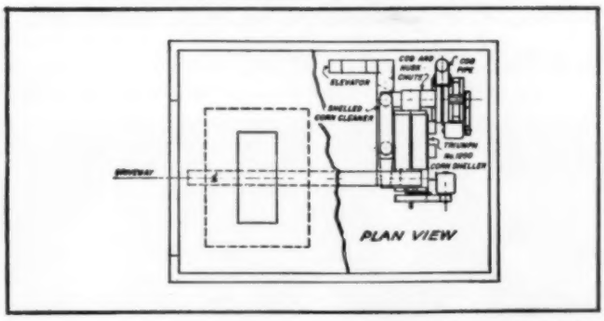

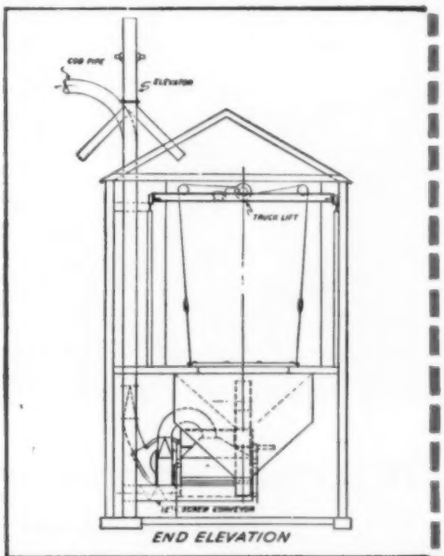

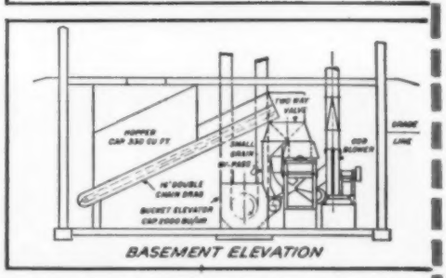

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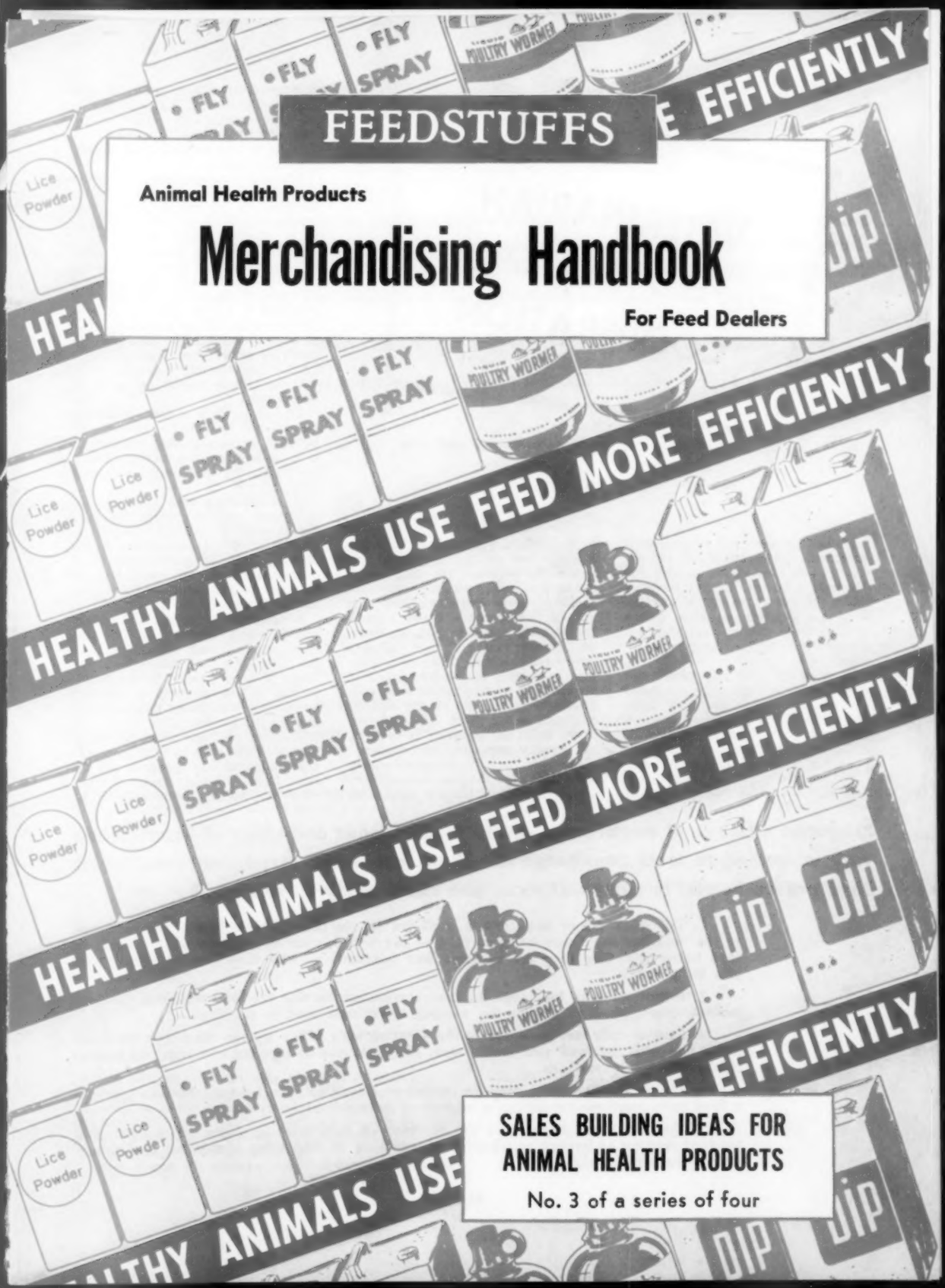
FEEDSTUFFS

Animal Health Products

Merchandising Handbook

For Feed Dealers



SALES BUILDING IDEAS FOR ANIMAL HEALTH PRODUCTS

No. 3 of a series of four

VETERINARIAN, FEED DEALER COOPERATION

Many feed men and veterinarians appreciate the necessity for, and advantages in cooperating to help the livestock industry. Recent developments in the make-up of formula feeds are encouraging both groups to re-evaluate existing attitudes with a view towards improving relationships.

Much of the difficulty which has existed between the two groups stems from misunderstanding. Many criticisms which veterinarians have are centered in the feed men's sale of medicines in packages or in mixed feeds for treatment of specific disease conditions. The veterinarian feels that before an attempt is made to treat disease conditions, a professionally trained person should examine the effected animals, render a diagnosis, then prescribe treatment.

Many of the criticisms feed men aim at veterinarians center around the latter's apparent lack of interest in nutrition and feed industry problems. This lack of interest, some feed men feel, frequently results in blaming the feed as the cause of conditions for which no readily obvious diagnosis exists. Such condemnation of the feed may be direct or indirect, but equally damaging nevertheless.

Further, the attitude exists among some feed men that the average veterinarian fails to interest himself in poultry diseases and practical management problems. Roughly 66% of all feed consumed by poultry is formula feed, therefore the feed man feels a strong interest in the poultryman's welfare.

The feed man and the veterinarian can do much to coordinate their thinking on the trend toward more medicating of feed. Both can make more effective use of this trend, it is felt by many persons in both groups. It is quite apparent that the feed manufacturer is best equipped to more efficiently mix one pound of medicine in a large quantity of feed. The resulting mix is bound to result in a more uniform distribution of the medicine in the feed than when the farmer tries to mix the same medicine in a large amount of grain at the farm.

Of course, the feed man should not be expected to shoulder the responsibility of preparing what amounts to a large number of patent medicines for which the feed simply acts as a carrier.

A veterinarian who has been familiarized with a certain feed and knows what it contains is bound to include it in his suggestions to his clients. This is particularly true with farmers who are not on a sound feeding program and need guidance in that direction.

A program of cooperation would result in less tendency for the veterinarian to permit a farmer to get the impression that the feed was the cause of some trouble. If the veterinarian is familiar with a feed he'd be less likely to blame misuse of the feed by the farmer.

The feed man can make the veterinarian a big help in putting across a sound nutritional program on the farm if he will only encourage and offer him the opportunity to do so.

Programs which feed dealers can use to make friends and allies of veterinarians vary according to local considerations. There are some steps, however, which have proven helpful in many instances and could apply generally. They are:

1. The steak dinner approach is a device for the basic introduction of the feed man to the veterinarian. It can be used to give the veterinarian information on the kinds of feed being sold, how they are fortified and questions on how they can be made to fit into his practice.

2. Invitations may be issued to the veterinarians to visit the feed store and the feed manufacturer's plant to discuss the various ingredients used in the feed.

3. Routine calls may be made to the veterinarian's office by the feed man to familiarize him with the feed sold in his area. He might also be supplied with tags and feeding instructions for these feeds.

4. The local veterinarian may be invited to attend an area feed meeting—or perhaps a feed sales meeting—to discuss a subject of mutual interest.

5. The feed man should give the veterinarian assurance, by statement or deed, that the feed man has no interest or intention of replacing or displacing him in his professional relationshp with his clients.

Here's What Other Feed Dealers Have to Say About Selling Animal Health Products, ...

Fifty-seven feed dealers representing every region of the U.S. replied to a Feedstuffs questionnaire about merchandising of health products. All of the 57 dealers said they carried animal and poultry health products. Following are the questions asked and the replies:

1. Do you handle animal and poultry health products, that is, disinfectants, wormers, insecticides, etc.
   57 said yes
2. Do you consider health products a profitable part of your feed business?
   55 said yes
   2 said no
3. What percentage of your gross income comes from health products, in your estimation?
   44 said 1-5%
   9 said 5-10%
   2 said 10-20%
4. Are you consulted by your customers about livestock and poultry health and diseases?
   37 said frequently
   19 said occasionally
   1 did not answer
5. What form of advertising brings best results in promoting health products? (Some gave two or more forms.)
   26 said local newspaper advertising
   20 said in-store and window displays
   19 said direct mail
   5 said radio
   8 gave miscellaneous answers
6. Is route selling effective in selling health products?
   26 said yes
   16 said no
7. Do you have some understanding with your local veterinarian concerning diagnosis and treatment of the common livestock and poultry diseases?
   31 said they did not have an understanding
   15 said they had an understanding
   11 did not say
8. What is the peak season in health product sales? (Several gave two seasons as being equal in sales volume.)
   25 said spring
   20 said fall
   9 said winter
   7 said summer

Conclusion:

It is evident from the statements of 57 feed dealers that they consider carrying a line of health products as essential in order to perform their functions as headquarters for feeds. Not only do feed dealers consider health products as necessary to complement their feed business, they find them profitable.

Feed dealers are a natural source of information about health problems, which suggests that they should be up-to-date on the basic facts concerning animal and poultry health problems.

The value of local newspaper advertising, in-store and window displays and direct mail in helping merchandise health products is emphasized by the replies of the 57 dealers.

Do You Know?

This is a multiple answer quiz to test your knowledge of raising livestock and poultry. There are no prizes for the bright boys but no dunce caps either. Select your choice from the list of possible answers and check against the correct answer immediately following each statement. Each correct answer counts 10 points. A score of 70 is passing, 80 good and 90 very good. Go to the head of the class if you score 100.

1. Given proper growing conditions, the largest single cause of off-grade chickens is:

(a) Breeding
(b) Nutrition
(c) Management
(d) Disease

ANSWER: (d). Dr. Robert White-Stevens of the American Cyanamid Co. reports breeding, nutrition and management all have possible effects resulting in off-grade birds, but the most important single factor appears to be diseases of varying intensity and effects.

2. Antibiotics in feed are most effective as:

(a) Substitutes for sanitary measures.
(b) Cures for visible outbreaks of disease.
(c) Preventatives against sub-clinical diseases.
(d) Stimulatives to make healthy animals grow faster.

ANSWER: (c). Experiments show antibiotics are most effective against sub-clinical diseases. Husbandmen emphasize antiobiotics never should be used in place of sound sanitary measures.

3. The best time to spend money to advertise animal health products is:

(a) During the slack season when the farmer is not busy.
(b) Just after the farmer's busiest period.
(c) When the farmer is most occupied with the animal to which the product applies.
(d) Any time.

ANSWER: (c). Advertising and merchandising men agree the most effective time to promote a product is when the farmer is busiest with the animals to which the product applies.

4. A feed salesman can best build and maintain good relations with customers by:

(a) Concentrating solely on his "line" of products.
(b) Helping a customer solve a problem even if it does not pertain directly to the salesman's product.
(c) Insistently pointing out the drawbacks of a rival product.
(d) Ignoring a customer who has expressed preference for a different product.

ANSWER: (b) Executives agree the best salesman is one who shows a genuine interest in helping his customers improve their businesses.

5. Many manufacturers offer point-of-sale aids containing space for feed dealers to add their own message. Dealers benefit most from such aids by:

(a) Refusing permission to put up posters and displays.
(b) Accepting such aids and displaying them prominently with a lengthy message added in the space provided.
(c) Accepting such aids and displaying them where the product is stored.
(d) Accepting such aids and displaying them prominently with a brief, yet complete, message in the space provided.

ANSWER: (d). Merchandising experts say the message to be added should be as short and eye-catching as possible. The display material then should be placed where the greatest number of customers can readily see it.

6. Unless medicated feeds are used, the annual loss of the calf crop would be approximately:

(a) 10-15%
(b) 15-20%
(c) 20-25%
(d) 25-30%

ANSWER: (c) Based on studies at Cornell University. (These studies also showed diseases cost a loss of between 300 and 400 lb. of feed per calf.)

7. The use of effective antibiotics in feed:

(a) Increases feed efficiency.
(b) Decreases feed efficiency.
(c) Produces no change in feed efficiency.

ANSWER: (a). The amount of feed consumed may increase because the animal is healthier and has a better appetite, but actually feed is saved because the animal gains more weight per unit of feed eaten.

8. Poultry lice can reduce egg production as much as:

(a) 10%
(b) 20%
(c) 30%
(d) 40%

ANSWER: (b). Research indicates the loss seldom exceeds 20%.

9. An antibiotic is most effective in the diet of laying hens when used:

(a) During both the growing and laying periods.
(b) Only when disease is apparent.
(c) Only during the growing period (i.e. before housing the birds).
(d) Only during the laying period.

ANSWER: (a). Tests by the American Cyanamid Co. show the use of an antibiotic in feed during the growing period results in more healthy birds at housing time (less culling). During the laying period, the antibiotic maintains maximum production and guards against losses due to disease ranging from 5% to 40%.

10. The best time to start chicks in order to realize the fullest production of higher price fall eggs is:

(a) December and January
(b) February and March
(c) March and April
(d) May and June

ANSWER: (c).

$35 PER 1,000 BROILERS FOR HEALTH PRODUCTS

With 10% of their young birds dying from poultry ailments or accident before they reach market age, Delaware broiler growers face a staggering bill averaging $2,500 per farm a year from such losses, says Dr. Ray Smith, University of Delaware agricultural economist. The average amount that the state's 1,000-or-so broiler growers spend on vaccination and medicines to keep their flocks in the pink of condition amounts to about $35 per 1,000 birds, Dr. Smith points out. Some spend as much as $75. Although many growers lose as many as 10% to 20% of their birds before they get as far as the inspector at the dressing plant, some growers manage to keep their losses to only 2 or 3%. Just to keep a flock of broilers in good health these days runs about 5% of the total cash costs for raising them, Dr. Smith says.

Shelves Kept Full Of Health Helps Attract Customers

"We feel that carrying animal health items for our customers is not only a service to them but also an added income and a 'must' if a dealer-er is going to be successful in the feed business," Ralph Gunter, Gunter Brothers, Morgan Hill, Cal., says.

Keep a full line of the latest in animal health aids on your shelves or the prospect will get health information and buy health products elsewhere, maintains Mr. Gunter, who, with his brother, Les Gunter, operate the Santa Clara County business.

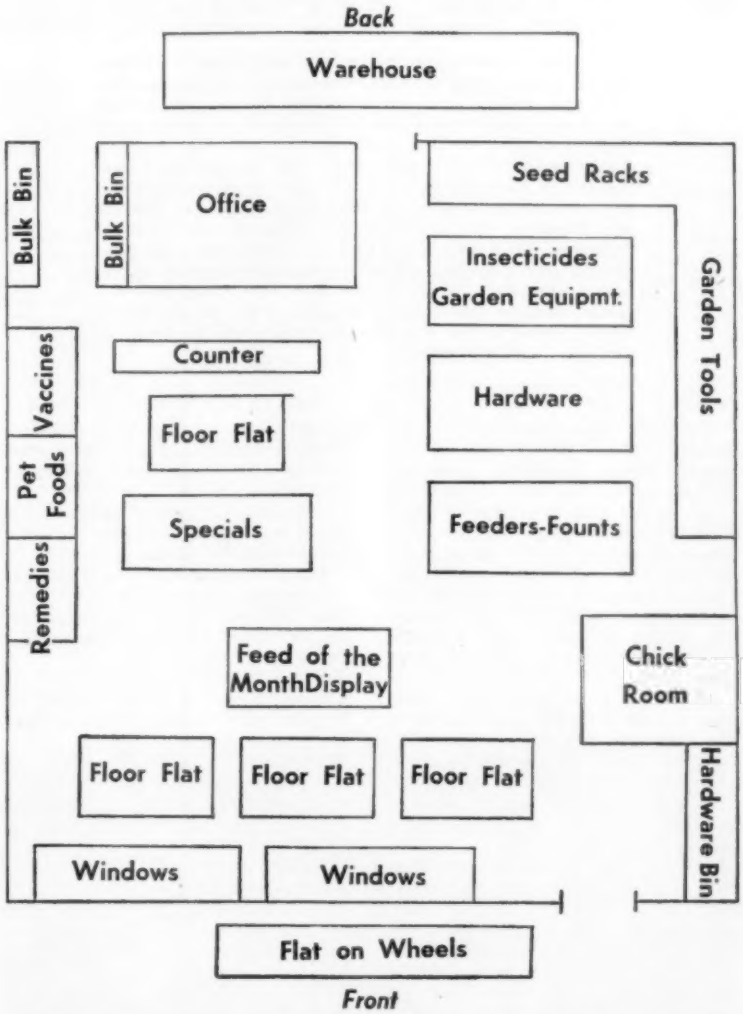
"Many feed dealers would like to sell feed only," Ralph Gunter says. "Perhaps that is the best way, but we, like others, carry straw and shavings along with other items that often are not long on profit or don't turn over too quickly, but add to the well-rounded feed store inventory. Even if we didn't want to carry such items, we'd still have to just to keep our customers happy."

The Gunter brothers' 700-tons-a-month feed business is concentrated mainly among area poultrymen, the Morgan Hill area being quite well suited for poultry raising. For that reason, the Gunters are poultry-minded as well as feed-minded in order to help their poultrymen customers over rough spots. They help their customers keep up-to-the-minute in poultry feeds, health problems, management and feeding programs.

There is considerable dairying and livestock farming in the area and for these prospects the Gunter firm carries wormers, anti-scouring products for calves, sprays and dusts for control of ticks and lice, disinfectants for brooder houses and calf pens and the many other products necessary for a good health program.

The Gunter brothers feel that progressive poultrymen know and use health products as part of their management program. Since many of their customers, like poultrymen throughout California, have flocks averaging 3,000 to 10,000 hens per owner, the item of health cannot be taken lightly.

Typical Arrangement of Feed Store Departments



THE SUGGESTED STORE ARRANGEMENT above shows how animal health products can be conveniently displayed and merchandised in a retail feed store. The layout is one suggested by the California Hay, Grain & Feed Dealers Assn. for use in planning or modernizing a retail feed store. Additions or changes in the locations of departments are possible, subject to the physical limitations of the store.

Internal Parasites in Livestock, Poultry Cause

FEED WASTE

A considerable percentage of the estimated $2.7 billion annual losses from livestock and poultry diseases, parasites and insects could be prevented by the widespread use of control measures, such as improved sanitation practices, according to the Agricultural Research Service, U.S. Department of Agriculture. In its survey titled, "Losses in Agriculture," the ARS breaks down livestock and poultry losses resulting from five causes: (1) Infectious diseases, (2) non-infectious diseases, (3) internal parasites, (4) insect pests and (5) marketing and processing. The following article summarizes losses from internal parasites. Losses in the first two categories are summarized in issues No. 1 and No. 2 in this handbook series. Losses in the last two categories will be found in issue No. 4 of the series.

Livestock losses due to internal parasites occur in all parts of the country and in all seasons. However, the climate has much to do with the type, spread and intensity of parasites, especially the weather from season to season. In general warmth, moisture and shade favor parasitism. Control measures are based largely on taking advantage of the destructive effects of unfavorable climatic factors on the various stages of parasites.

About 300 kinds of internal parasites are of economic importance to the livestock industry of the U.S. Some are very common. Few animals are ever entirely free from them. Losses occur in animals of all ages but are heaviest in young stock, chicks and turkey poults.

It is difficult to arrive at accurate estimates of losses from internal parasites because the specific ways in which the losses are sustained are hard to determine. The losses from internal parasites may come through mortality (death losses), morbidity losses and control costs, or charges ascribable to protection against parasites. Morbidity losses include such items as reduced yield and depreciation of animal products, condemnation of parts and carcasses, waste of feed, labor and space, interference with breeding, reduced animal quality, reduced efficiency of animals, depreciation of capital items, inefficient use of pastures, barns and pens by unproductive stock and lower resistance of infected stock to other diseases and parasites.

Vigilance against parasites is accepted as an essential aspect of efficient management. Much of the loss from both diseases and parasites is preventable by known means. A recent estimate indicates that preventable losses may amount to about 10% of the annual value of livestock production.

Estimates of annual losses to livestock and poultry from the most severe internal parasites are:

Cattle: Coccidiosis $10 million; gastroenteritis $13.6 million; liver flukes $3.5 million; worm parasites $8.9 million; total losses to cattle due to parasites $37 million.

Hogs: Kidney worms $72.7 million; internal parasites $78.5 million; red worms $10 million; roundworms (large intestinal) $49.8 million; threadworms (intestinal) $25.9 million; whipworms $13 million; nodular worms $26 million; total losses to swine due to parasites $276.7 million.

Poultry: Blackhead in chickens $149,000; blackhead in turkeys $3.8 million; capillarids in turkeys $320,000; coccidiosis in chickens $38 million; coccidiosis in turkeys $466,000; helminthiasis in chickens and turkeys $897,000; hexamitiasis in turkeys $667,000; intestinal roundworms in chicks and turkeys $283,000; leucocytozoon in turkeys $708,000; tapeworms in chickens and turkeys $739,000; trichomoniasis in turkeys $47,000; total losses to poultry due to parasites $46 million.

Sheep: Gastroenteritis (parasitic) loss of sheep $22.7 million and wool loss $4.5 million; liver flukes $4.6 million; nodular worm loss of animals $6.5 million and wool loss $1.8 million; total losses to sheep due to parasites total $37 million in animal loss and $6.8 million in wool loss.

Total annual losses to livestock and poultry (including losses to goats, horses and mules as well as animals and poultry mentioned previously) are $432 million.

A LARGE SUPPLY of health products is stocked by the Rural Supply Co., Los Gatos, Cal., retail outlet of the Clara Feeds Co. Bill Radenich, co-operator of the firms, is shown here with a section of the well-stocked display. Owners of the firms feel that a customer who is unable to buy a health product he wants may walk out, buy it at another source and be lost as a customer.

Health Products Aid California Firms' Expansion

Since its founding 12 years ago by C. E. Pfefferle, the Clara Feeds Co., Los Gatos, Cal., has leaned greatly on a service program and the availability of health products in building up a 400-ton-a-month feed trade. Mr. Pfefferle, who, with his son-in-law, Bill Radenich, operate the firm and its retail outlet, the Rural Supply Co., do a large volume of their business with poultrymen.

"We are in a good position to offer suggestions to customers and supply them with needed assistance at once if they are headed for trouble," say the operators of the Los Gatos firms. "This applies not only to poultry but to all livestock, including pets," they claim.

However, the customer is made to understand the proper uses of each different health product sold so that the right item is applied. By building up confidence in their customers in the proper use of health products, a steady business for feeds and related products is maintained and the buyers are kept happy.

"We feel that if a customer comes into our retail store for a product and we don't have it he will go elsewhere to find it. Consequently, a customer may continue going elsewhere," Mr. Pfefferle states.

Prevention is the key to disease problems among their customers' flocks and animals, Mr. Pfefferle and Mr. Radenich feel.

"One-Stop" Selling of Feed, Health Products Pays Off For Falls City, Neb., Dealer

The "one-stop" theory of selling the farmer both feed and animal health products is paying off, according to P. E. Beasing, executive vice president of the Englehart Corp., Falls City, Neb.

The Englehart firm built an elevator at Falls City seven years ago. Three years ago it constructed a separate building, adjacent to its elevator, where a wide variety of animal health products are being sold each day.

"We've found that farmers come in to buy feed and will take a look at our animal and health poultry displays. Before you know it, they're asking about the products and most times they leave with a purchase of both feed and health products. In the same way, some of our customers will stop in for a specific remedy and their eye is caught by a feed advertisement or display. The result many times is another double sale," explains Mr. Beasing, an energetic young man who isn't missing out on any new ideas.

The Englehart establishment is on the edge of Falls City, just two blocks from a main highway. Signs along the highway point to the towering elevator.

"Many of our customers realize it is much simpler to stop at our place, buy their feed and purchase their animal health needs, than to go into town and try to find a parking place. We offer them good service and they appreciate it," Mr. Beasing declares.

Television, radio and newspaper advertising have aided greatly in the sale of the health items, Mr. Beasing states. People hear of the products, come in to look at them and then go home with a sample purchase. Before too long, they are regular customers, he has found.

The feed and health product operation draws customers from a radius of 25 miles.

Keeping the animal health products prominent in his displays and on shelves as well as on racks where the potential buyer can inspect the labels has helped in his merchandising. In addition to the actual contact sales in the store, one store salesman and one outside salesman keep in close contact with customers on the farms in the trade area.

When a customer comes in to buy feed, it isn't unusual if the talk turns to the latest in antibiotics and vitamin compounds or animal sprays. With the product on hand and examples of successful uses to cite, it doesn't take too much work to make a sale. The net result of the combined operation has been an increase in both the sale of feed and also of the health products, as well as other farm supplies.

The cozy sales office attracts farmers bringing grain to the elevator. The first thing he sees inside the sales room are neat displays of feeds of various types and the health products.

On racks are located samples of the products and brilliantly colored posters call the attention of the eye to the joint displays. Eye-catching devices make the customer realize the store sells both feed and the health products needed to keep them in fine condition.

"Are there slack periods in the sale of health products?"

"No, the sale is good the year around. In spring, just when you'd think things might quiet down a bit, you find the sale of weed killer picks up or there is a demand for some certain health product. We have a good steady business in the products. We aren't trying to replace the veterinarian. We just supply the things he recommends for good livestock production," Mr. Beasing says.

"The sale of the animal health items has fitted in well with our plans. We have the idea a farmer would much rather make one stop and obtain his needs than make three or four such stops. We use classified advertisements in the daily Falls City Journal, and we've had good results. One interesting thing is we've had better luck using our own wording in the advertisements than by using outside sources. It apparently makes our ads seem more 'homely'," Mr. Beasing continued.

Mr. Beasing notes that youngsters often accompany their parents to his store. He takes pains to answer their questions because he realizes they will be his customers in the years ahead. Every youngster leaves the place with an all-day sucker. That's to help them remember the place where you can buy both feed and animal health products.

FEED CUSTOMERS at the Englehart Corp., Falls City, Neb., feed and grain firm, are impressed with this attractive display of animal health products, a technique which is conducive to "one-stop" selling. Feed helps sell health products and vice versa, P. E. Beasing, executive vice president of Englehart feels.

RINGING THE cash register

MERCHANDISING HINTS FOR THE FEED RETAILER

Proof Positive

There's a simple way of showing a poultryman how important it is to maintain his flock in a healthy condition, say poultry husbandry department officials of Pennsylvania State University. Their point is this. Under experimental conditions it has been demonstrated a number of times that when birds are maintained under favorable environmental conditions and inoculated with a disease producing organism, difficulty is frequently encountered in getting the birds to come down with the disease even though they are fundamentally susceptible. In some cases they develop the disease but quite often it appears in a mild form with little or no mortality. On the other hand, similar birds, poorly fed and maintained under adverse conditions as would exist in a cold, damp and poorly ventilated house will, upon inoculation, come down with a severe case of the disease and frequently accompanied by all of its costly symptoms including high mortality. What better proof would a poultryman need to understand that it pays to provide his birds with conditions that are conducive to their comfort and maintain them in sound health?

$ $ $

New Business

One feed dealer provides an unusual service for his customers. Whenever a customer and his family plan a day's or two-days' trip to the city or vacation, he offers to feed the poultry and livestock during the period the family is away. The dealer makes no charge for this service. "We picked up many feed customers since we started this service," says the dealer. "Also, taking care of the customer's poultry and livestock for a day or two gives us an opportunity to see how they are progressing and sometimes we may suggest certain animal health products or changes of feed. Our customers have come to trust our judgment," he adds.

$ $ $

Help Sell Feed

Health products are a great help in selling feed, according to one dealer. In telling the customer about a recommended feeding program it is a good policy to point out that healthy pigs, cattle and poultry are the only ones which make money for the farmer. Healthy herds and flocks likewise are the only ones which supply the demand for feed which the feed store sells. So the matter of animal and poultry health and feed goes together, the dealer explains.

Cornell Issues 1956 Recommendations for Animal Insect Control

Recommendations for control of livestock insects for 1956 have been issued by Cornell University, Ithaca, N.Y.

The recommendations follow research on the control of livestock insects by H. H. Schwardt, J. D. Sells, Elton Homan and Dale Haws over a period of several years in which numerous products were involved.

Here are the recommendations:

Houseflies in dairy barns: (1) Diazinon 1% as residual on walls and ceilings. (2) Malathion 1.25% as residual on walls and ceilings. (3) Dry baits containing malathion, diazinon, or Dipterex. (4) Daily use of synergized pyrethrins as space spray or aerosol. Strict sanitation and prompt manure disposal are necessities if any of the above measures are to be completely satisfactory.

Horn flies on dairy or beef cattle: Methoxychlor at .25% dosage applied monthly, or oftener if necessary.

Heel flies: Seven and one half pounds 5% rotenone in 100 gallons, applied to backs at around 300 lb. pressure. Preferably three applications a month apart and beginning April 1.

Cattle mange mites: Lindane .06%, two gallons per adult cow, two applications a week to 10 days apart, applied at 300 lb. pressure.

Cattle lice: Lindane .03%, two gallons per cow, two applications 18 to 21 days apart, applied at 300 lb. pressure. Preferably spray when cattle are first stanchioned in fall. (2) One half to 1% rotenone dust, 2 to 3 oz. per animal applied at stanchioning time in fall.

Hog lice and/or mange mites: Lindane .06% spray, one application when infestation arises.

Sheep ticks and/or lice: DDT .25% as dip or spray, but dipping highly preferred. Apply about two weeks after shearing.

Sheep scab mites: Lindane, .06% as dip, two applications 10 days apart.

Poultry lice:

(1) Malathion, 2% spray, applied to roosts and roosting areas.

(2) Lindane, .25% spray, applied to roosts and roosting areas.

Poultry red mite:

(1) DDT, 4% spray applied to roosts and roosting areas.

(2) Malathion, 4% dust applied thoroughly to roosts, nests, and adjacent areas.

Northern fowl mite:

(1) Malathion, 4% dust applied thoroughly to roosts, nests, and adjacent areas, and to floor litter at the rate of 1 lb. per 20 sq. ft. of area.

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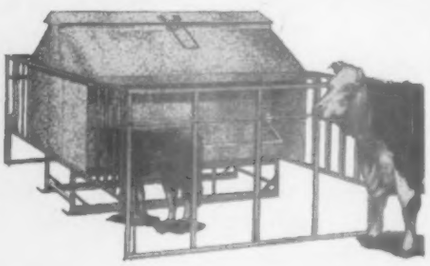

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Use of Alfalfa Meal in Cattle, Sheep and Swine Rations

By DR. W. M. BEESON

Purdue University Department of Animal Husbandry

EDITOR'S NOTE: Confining himself in the accompanying article to the most important uses of dehydrated alfalfa meal in the rations of cattle, sheep and swine, Dr. Beeson reviews research that has been done by various researchers. And on the basis of these findings he makes some specific suggestions as to how livestock rations can be improved with alfalfa meal. This article is the text of a talk Dr. Beeson gave at the recent convention of the American Dehydrators Assn.

♥ ♥

The increased use of poor quality roughages such as corn cobs, cottonseed hulls, straw, corn stalks, corn silage and the like in rations for beef cattle, sheep and swine has re-emphasized the use of dehydrated alfalfa meal as a supplement to improve the nutritional status of these animals.

Many experiments have shown that dehydrated alfalfa meal will improve the growth rate and reproductive efficiency of farm livestock. Since several excellent review papers (1, 2) have been published in 1955 on dehydrated alfalfa meal, this paper will be confined to reviewing a few experiments which indicate the most important uses of alfalfa meal in rations for the species indicated.

BEEF CATTLE—Alfalfa meal contains some unknown factor(s) which stimulates gain and improves the utilization of feed by cattle on both growing and fattening rations. Many experiments have been conducted at Purdue University to improve the formula of "Supplement A" for beef cattle by adding different ingredients such as fish meal, fish solubles, distillers solubles, molasses solubles, "B" complex vitamins, dried brewers yeast, active cell yeast, live rumen concentrates, antibiotics and hormones.

Although some improvement in gain and feed efficiency has been made by adding active cell yeast and fish meal to the diet, the most consistent and significant effect has been obtained by fortifying the ration with dehydrated alfalfa meal, antibiotics or hormones.

Research at Purdue (3) has shown that feeding 0.5 lb. of dehydrated alfalfa meal per steer daily will significantly increase gain and feed efficiency above and beyond any extra carotene, protein or energy that might be furnished by this small amount of alfalfa meal. Thus, the value of dehydrated alfalfa meal in cattle supplements cannot be assessed entirely on a carotene (pro-vitamin A) and protein basis, but equally important are the unidentified growth factors, other vitamins and mineral elements.

A typical effect of including 14% of dehydrated alfalfa meal in the formula of "Supplement A" is given in Table 1.

Table 1—Dehydrated Alfalfa Meal in Corn Cob Rations for Steers*

Lot	Ration	Daily feed, lb.	Daily gain, lb.
1	Corn cobs	16.5	1.33
	Supplement A ..... (no alfalfa meal)	3.5	
2	Corn cobs	18.6	1.61
	Supplement A with 14% alfalfa meal.	3.5	

*Beeson, et al—1953—Purdue Agr. Expt. Sta. Mimeo AH-101.

Likewise, research at the Nebraska Experiment Station (4, 5) has shown an improvement in the rations of cattle fattened on ground ear corn by fortifying the diet with small amounts (1 to 3 lb.) of dehydrated alfalfa meal. Note in Table 2 the increase in daily gain by adding various levels of alfalfa meal.

Gain in Proportion to Meal

These data (Table 2) indicate that as the proportion of dehydrated alfalfa meal in the supplement increased, the average daily gain increased and less feed was required per unit of gain.

According to these research workers, a ton of dehydrated alfalfa meal replaced 1,164 lb. of soybean meal, 1,436 lb. of ground ear corn and 891 lb. of corn silage, indicating again that dehydrated alfalfa meal improves the utilization of feeds for beef cattle far beyond its energy and protein value.

Table 2—Effect of Dehydrated Alfalfa Meal in Fattening Rations for Cattle*

Supplements†	Daily gain, lb.
No alfalfa meal, 1.5 lb. soybean meal	2.32
1.0 lb. alfalfa meal, 1.0 lb. soybean meal	2.52
2.0 lb. alfalfa meal, 0.5 lb. soybean meal	2.62
3.0 lb. alfalfa meal, no soybean meal	2.71

*Baker, et al—1947—Nebraska Agr. Expt. Sta. Cattle Report 190.

†Basal ration was composed of ground ear corn and corn silage.

Part of this stimulating effect of alfalfa meal is contained in the ash or mineral portion. Klosterman, et al (6) have shown that a ration of ground ear corn and poor quality hay

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can be improved with dehydrated alfalfa meal (Table 3).

Table 3—Alfalfa Meal vs. Alfalfa Ash as a Supplement for Fattening Steers*

Source of protein†	Daily gain, lb.
Soybean meal	1.81
Alfalfa ash + soybean meal	2.19
Alfalfa meal	2.28

*Klosterman, et al — 1953 — Ohio Agri. Expt. Sta. Research Bulletin 732.
†Basal ration was composed of ground ear corn and poor quality hay.

An eight-year study by Watkins (7) with beef breeding cows wintered on range forage in New Mexico showed that reproductive performance was improved by feeding different supplements for 90 days during the winter period. Weight loss of the cows during calving was reduced; weaning weight of the calves and the per cent of calves weaned were increased by feeding either grain or cottonseed cake, but the greatest improvement was found in the cottonseed-alfalfa meal lot.

A cube consisting of 70% cottonseed meal, 23% dehydrated alfalfa meal and 7% molasses was fed the first five years, and then a pellet was used containing 70% cottonseed meal and 30% alfalfa meal. Apparently, dehydrated alfalfa supplies a factor(s) in addition to carotene (pro-vitamin A) which was beneficial to the range cows and calves because forage and blood analyses showed no vitamin A deficiency.

A review of many research studies with cows and calves under range conditions indicates that usually the most limiting nutrients are energy, protein, phosphorus, unidentified factors (alfalfa meal) and a variety of trace minerals—usually cobalt and iodine. Range cubes should be manufactured to contain the proper balance of these nutrients.

SHEEP — EWES AND LAMBS— No farm animal responds more consistently and significantly to the use of high quality legume feeds, such as dehydrated alfalfa meal, than ewes and lambs. It is difficult and usually not possible to raise sheep satisfactorily without including high quality roughages in the ration. These nutritional factors have to be supplied either by green pasture, high quality legume hay or by supplementing the ration with dehydrated alfalfa meal.

Research at Purdue University by Shrewsbury, et al (8) has shown that high quality roughages, such as alfalfa hay, dehydrated alfalfa meal and dehydrated cereal grasses, are superior to non-leguminous roughages for meeting the nutritional requirements of breeding ewes during gestation and lactation.

When ewes were fed poor quality roughages during gestation, gain during pregnancy was retarded, milk production was reduced, lambs were weak and growth rate of lambs was slow. Lambs from ewes fed dehydrated alfalfa hay weighed 14 lb. more in eight weeks than the control lambs from ewes on poor roughages. Wool clip was significantly increased from 8.5 to 10.1 lb. per ewe by the feeding of dehydrated alfalfa.

Studies reported from Purdue in 1954 by Stitt, et al (9) showed that pregnant ewes fed on corn cobs could reproduce satisfactorily and raise healthy lambs if the diet was supplemented with 1 lb. of dehydrated alfalfa meal per ewe daily. Feeding dehydrated alfalfa meal reduced the weight loss of the ewes 10 lb., increased wool clip per ewe 2 lb. and increased the birth weight of the lambs 4%.

Creep Feeding Lambs

Recent experiments at Purdue University (Perry, et al, 10) have indicated that dehydrated alfalfa meal equals the value of corn in creep rations for suckling lambs. Six lots of single lambs were fed pelleted creep rations containing 0%, 20%, 40%, 60%, 80% and 98% dehydrated alfalfa meal. All but the last ration contained 10% soybean meal and corn was in the amounts of 88%, 68%, 48%, 28%, 8% and 0% respectively. Some of the more important results are given in Table 4.

Table 4—Levels of Dehydrated Alfalfa Meal in Lamb Creep Rations*

Lot	Level of alfalfa meal†	Daily gain, lb.	Daily feed, lb.
1	None (basal)	0.79	0.52
2	20%	0.76	0.45
3	40%	0.75	0.53
4	60%	0.69	0.59
5	80%	0.72	0.52
6	98%	0.74	0.49

*Perry, et al—1956—Purdue Agr. Expt. Sta. Mimeo AH 159.
†Basal creep ration was a pellet composed of 88% corn, 10% soybean meal, 1% bone meal, 0.5% iodized salt and 0.5% vitamin pre-mix. Pre-mix contributed 10 grams mixed tocopherols, 5 million units of vitamin A and 665 thousand units of vitamin D per ton of ration. Lot VI ration did not contain any corn or soybean meal and alfalfa meal was substituted for corn in the other rations.

The results of this experiment indicate that (1) lambs fed pellets containing 98% dehydrated alfalfa meal gained as rapidly and efficiently as lambs fed pellets containing less (20 to 80%) dehydrated alfalfa meal, 10% soybean meal and corn, (2) dehydrated alfalfa meal was equal in value to a combination of corn and soybean meal, and (3) that incorporating high levels of alfalfa meal in a lamb creep pellet did not decrease consumption or change the palatability.

These results emphasize the need for more research on the use of alfalfa and in creep rations for lambs and also the same type of research should be done with beef calves. Studies are under way now at Purdue to obtain additional data on the use of dehydrated alfalfa meal in creep rations for lambs.

Lamb Fattening Rations

Various proportions of alfalfa meal are used extensively in self-fed rations for lambs to control grain intake and to supply nutritional factors essential for a balanced diet. Also dehydrated alfalfa pellets are incorporated in the diet to stimulate gains and to improve feed efficiency.

Lamb fattening tests at Colorado by Esplin, et al (11) have demonstrated that dehydrated alfalfa meal is superior to chopped alfalfa hay. In five experiments lambs receiving from ⅓ to 1⅓ lb. of dehydrated alfalfa meal gained from .02 to 0.6 lb. more daily than lambs fed chopped hay. Also, in this experiment there was a marked improvement in carcass grade and yield from the feeding of dehydrated alfalfa meal.

Other experiments at Colorado (12) have indicated that feeding dehydrated alfalfa meal or pellets at a level of 0.5 lb. per lamb daily with a ration of grain and alfalfa hay will improve feed efficiency and cheapen the cost of gains.

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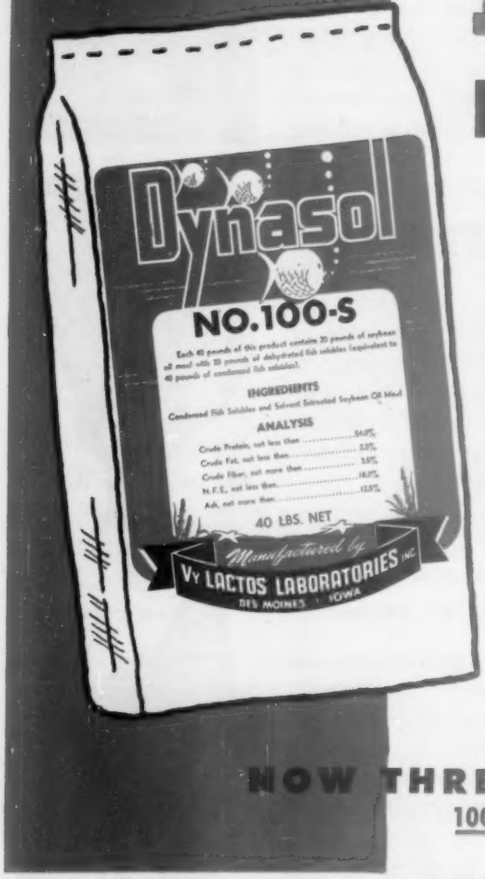

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tion are obtained with lamb fattening rations composed of grain, soybean meal, corn silage and a limited amount of alfalfa hay. Research at Nebraska (13) has shown a significant improvement in gain and feed efficiency by substituting dehydrated alfalfa meal for alfalfa hay in lamb fattening rations. These results are illustrated by the data given in Table 5.

Table 5—Substituting Dehydrated Alfalfa Meal for Alfalfa Hay in Lamb Fattening Rations*

Lot	Treatment†	Daily gain, lb.	% Feed saved
1	Ground alfalfa hay	0.26	..
2	Dehydrated alfalfa meal	0.35	17

*Harris, et al—1952—Nebraska Agr. Expt. Sta. Lamb Feeding Report.
†Ration was composed of grain, soybean meal, corn silage and either ground alfalfa hay or dehydrated alfalfa meal.

Gestation Rations for Sows

It is a well established fact that green pasture and dehydrated alfalfa meal furnished unidentified factors which will increase the birth weight, livability and health of newborn pigs. There is no single feed ingredient that contributes more to balancing swine rations during pregnancy in drylot than dehydrated alfalfa meal. All drylot rations for brood sows should contain from 10 to 15% or more high quality alfalfa meal.

In 1945 Krider and Carroll (14) reported that gilts fed a 15% protein ration containing yellow corn, soybean meal, tankage, fish meal and minerals weaned only 13% of their pigs, while gilts on the same diet fortified with 10% dehydrated alfalfa meal weaned 83% of the pigs farrowed—a difference of 70% by the addition of alfalfa meal. Additional research by Krider, et al (15) showed that supplementing a gilt diet with 12% alfalfa meal improved the conception rate and increased the number of strong pigs from 39% (basal) to 60%.

A series of experiments by Vestal, et al (16) at the Purdue Station revealed that dehydrated alfalfa meal contained nutritional factors which would increase the strength, vigor and livability of newborn pigs.

The data given in Table 6 are typical of the effect of dehydrated alfalfa meal on the strength and percentage of pigs weaned.

Table 6—Influence of Alfalfa Meal and Other Factors on Newborn Pigs*

Ration	Birth weight, lb.	Strong pig, %	Weaned, %
Basal†	2.24	59	40
15% Dehydrated alfalfa meal	2.48	80	84
5% Dried whey	2.33	65	51
Alfalfa pasture	2.47	77	80

*Vestal, et al—1948—Purdue Agr. Expt. Sta. Mimeo AH 34.
†Composed of yellow corn, soybean meal, minerals and cod liver oil.

Usually including 15% of dehydrated alfalfa meal in the ration of a sow or gilt is equivalent to feeding 1 lb. of alfalfa pellets or meal per sow daily. In cases where complete mixed rations are not fed to sows, then feeding 1 lb. of alfalfa pellets per sow daily along with grain, a protein supplement and minerals should furnish a balanced diet.

Fattening Rations for Swine

In 1922 F. B. Morrison and associates working at Wisconsin were the first research workers to recognize the importance of including high quality alfalfa meal in protein supplements for swine. After several years of research, these workers developed the "Wisconsin trio mixture" which was composed of 50% tankage, or meat scraps, 25% ground alfalfa hay and 25% linseed meal. This was one of the most widely used and popular supplements for many years. It was the beginning and foundation of most hog supplements that have been developed in later years.

Since that time many excellent supplements have been developed, and most of the research to date indicates that a good quality hog supp'ement should contain at least 10% dehydrated alfalfa meal for hogs fed in drylot.

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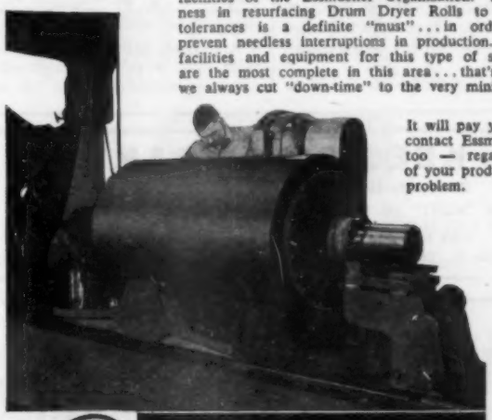

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several methods: (1) by breeding, (2) by limiting the feed intake and (3) by feeding low energy diets. Although the use of alfalfa meal to control the energy intake of hogs is not necessarily an economical practice, now it offers an interesting way of producing hogs with more lean and less fat.

Recent studies by Bohman, et al (17) at Nevada have shown that incorporating high levels of alfalfa meal in the fattening rations for pigs will produce leaner carcasses but also will depress growth rate and reduce feed efficiency.

Some of the results obtained in this experiment are given in Table 7.

Table 7—Effect of Alfalfa Meal on Growth Rate and Carcass Characteristics of Swine*

Level of alfalfa meal	0%	10%	30%	50%
Daily gain, lb.†	1.8	1.7	1.4	1.0
Dressing percentage, %	74.6	73.0	69.6	68.1
Back fat depth, inches	1.8	1.7	1.3	1.1
Ham in carcass, %	15.7	16.3	17.7	18.9
Fat back in carcass, %	11.3	10.4	6.9	5.1

*Bohman, et al—J. Animal Science, 14:499.
†For lots fed without Aureomycin. Other data is for pigs fed with and without Aureomycin but there was no difference in carcass data between these experiments.

Although using high levels of alfalfa meal to produce leaner hogs has not been worked out to the satisfaction of the producer and the consumer, it offers a stimulus for further research to solve the swine raiser's most pressing problem of "too much fat on the present day hog."

SUMMARY—Research never permits the drawing of final conclusions because research is a continuous and advancing process. A few ideas which may be useful in improving livestock rations with dehydrated alfalfa meal are as follows:

● Beef cattle supplements designed to balance the deficiencies of low quality roughages should contain 14% dehydrated alfalfa meal.

● Fattening rations for cattle can be improved by feeding from 1 to 3 lb. of alfalfa meal per steer daily.

● Alfalfa pellets can be used to supply unidentified factors and also for carriers of antibiotics and hormones when extra sources of protein are not required in supplementing cattle rations.

● Wider use should be made of alfalfa meal in creep rations for beef calves.

● Ewes fed during gestation on poor quality roughages should receive 1 lb. of alfalfa pellets daily to insure a healthy lamb, normal growth and abundant wool crop from the ewe.

● Creep rations for lambs may contain from 20 to 98% dehydrated alfalfa meal with excellent results.

● Ten per cent or more of alfalfa meal should be included in all drylot protein supplements for swine.

● Birth weight, weaning weight, per cent of pigs weaned and general health of pigs can be improved significantly by incorporating 15% alfalfa meal in the complete hog ration or by feeding 1 lb. of alfalfa pellets per sow daily.

● Leaner hogs can be produced by feeding higher percentages of alfalfa meal (30 to 50%) in the ration but at present this is not practical because the growth rate is reduced and the feed required increased.

● Reviewing all the literature published on the use of dehydrated alfalfa meal in livestock rations indicates rather clearly that the potential value of this product has not been completely determined; thus, entirely new approaches need to be explored.

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Processors of DRIED FISH SOLUBLE PRODUCTS
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"PRODUCTS OF PROGRESS"

Charles R. Bronaugh

NEW REPRESENTATIVE—Charles R. Bronaugh has been appointed sales representative in Kansas and Nebraska for Arkell & Smiths, makers of multiwall bags and flexible packaging, it has been announced by R. E. Jury, vice president of western sales. Mr. Bronaugh will continue to live in Wichita, Kansas, but will work out of the company's new Kansas City, Mo., office.

Fort Worth Steel Makes Appointments

FT. WORTH, TEXAS—Three new appointments have been announced by the Fort Worth Steel & Machinery Co., maker of mechanical power-transmission and bulk-materials-handling equipment.

Gene Margro, formerly Pacific regional manager of FWS&M, has been promoted to a new post, manager of the company's specialized machinery division. Joe Temblador, previously district manager in Los Angeles for the firm since 1949, has succeeded Mr. Margro as Pacific regional manager.

Harold V. Bowlby of Eureka, Mo., is the company's new district sales manager for an area including parts of Missouri, Illinois, Indiana, Ohio and Kentucky.

Mr. Margro has been transferred from Los Angeles to Ft. Worth to direct both design and sales of the company's specialized machinery, including feed mill equipment.

With FWS&M since 1946, Mr. Margro first was district manager at Memphis for 1½ years before transferring to Los Angeles as district manager. A year ago he was named regional manager.

Mr. Bowlby, who succeeds Manse Gilbert, makes his headquarters at FWS&M's St. Louis office and distribution warehouse. For six years prior to joining the company, Mr. Bowlby was a district sales representative in the western portion of his present sales area for an industrial rubber products manufacturer.

IOWA FIRM SOLD

HARLAN, IOWA — The Feeders Supply Service has been purchased by the I. & K. Grain & Feed. T. P. Plahn will remain as manager at the Irwin, Iowa, store and Mal Erickson will stay on as the Harlan, Iowa, manager.

NOW AVAILABLE

10% Feed Grade Folic Acid

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Samples and complete information on request.

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CCC Fine Grind Calcium Carbonate STAYS PUT

With CCC Fine Grind Calcium Carbonate you get peak distribution in your feed . . . this helps the animal to give peak performance.

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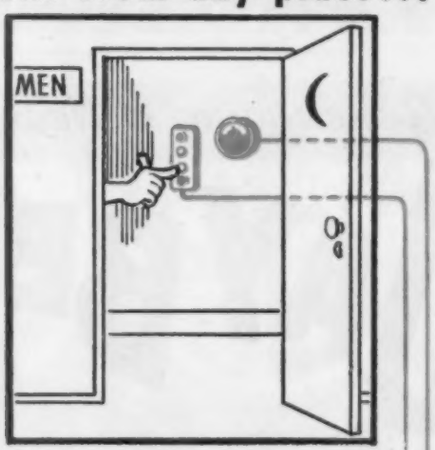
NOW... you can control the feeding rate of your hammermill from any place...

REVOLUTIONARY FORDS Remote Control HAMMERMILL

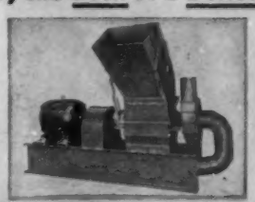


with electrically operated "PUSH BUTTON" Feed Control

THE ONLY COMPLETE CONTROL FOR ALL 3

Grains • Ear Corn Roughage

By the Push of a Button



The enormous throat provides unobstructed feeding of roughages (even 20" square bales) as well as ear corn and small grains. When the feed control is in closed position no material can enter the mill. This chute, with any type of extension including gravity dump sink above the mill, can be completely filled with material. When the mill is running, the feed control can be opened, by the remote control button, until the ammeter registers the proper horsepower. When stopped at that position, the material will be ground uniformly, without power surge, and with maximum efficiency.

UNIFORM GRANULATION—All material is ground *in suspension* against the feed control plate to the size determined by the grind "setting" before passing through the screen. The action of the hammers on the suspended material pulverizing against the control plate eliminates "stringiness" and provides uniform granulation. Exposed hammers at base of inlet chute provide a "live bottom" to prevent bridging and assure a constant flow of material.

CONTROL YOUR GRIND FROM THE WORK FLOOR... DUMP SINK ...THE MILL... THE OFFICE... OR *ANYWHERE!*

● The most outstanding new development in the industry, this new electrically operated remote feed control is exclusive with FORDS Industrial Hammermills. This new unit controls the feeding rate of hay and other roughages, as well as grain and ear corn, into the FORDS mill by the push of a button. Lets you operate the mill from any place—inside or outside the building, or even from another building. Enables you to grind at a uniform, constant rate, with exactly the horsepower available, and assures a true *granulation* from positive "suspension" grinding. Even hay and roughages grind uniformly without variance in particle size or the "strings" common to average grinding. Since it virtually eliminates surges in power demand, the new FORDS Electric Control materially reduces over-all electric power costs. Makes it unnecessary to use a crusher feeder, with motor and drive. Many installations using this new control will not need a drag conveyor and drive for conveying material to the mill. Find out how much you can *save* on time, equipment and operating costs with this new FORDS Remote Control Hammermill.

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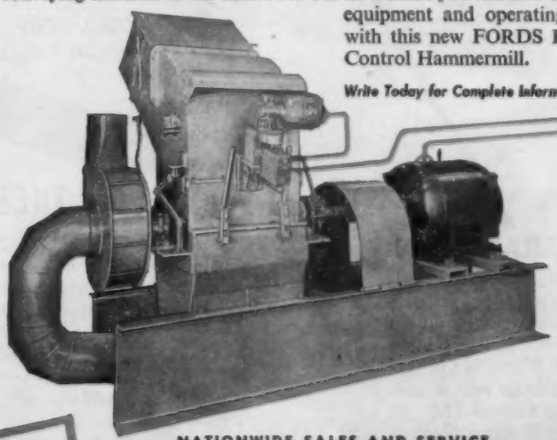

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For nearly four decades we have built a reputation for dependable service to the feed industry . . . a reputation based on prompt shipments of top quality molasses at lowest prices.
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Virginia Economist Suggests Broiler Financing Plan

BLACKSBURG, VA.—Dr. John T. Buck, agricultural economist at Virginia Polytechnic Institute, has outlined a "production efficiency" broiler contract for possible use by feed firms and growers.

He said the plan is based on efficient production, with payments to growers adjusted to cost-market price relationships.

Most present financing plans, he said, offer little or no incentive to growers to produce more efficiently, particularly when the market price is at or below cash cost of production.

Dr. Buck said he believes the "production efficiency" contract would assure the grower some income throughout the year, encourage a higher level of efficiency, and help to minimize swings in production and in market prices.

In order to encourage growers to continue efficient production during times when the market price of broilers goes below cash production costs, the dealer would pay the grower at least 1¢ a pound (⅓ of the grower's estimated non-cash costs). At all market prices above total costs of production (around 22¼¢, according to Dr. Buck's estimates) the grower would receive 2¢ per pound to cover his non-cash costs, plus a share of the proceeds above total production costs.

The dealer would receive a major share of the net proceeds above total production costs in order to recover losses taken when market prices were below cash production costs. As long as the market price was less than 6¢ above total cash costs, the grower would receive 25% and the dealer 75% of the net proceeds above total production costs. At all market prices 6¢ or more above total cash costs, the proceeds above total production costs would be divided equally between the grower and the dealer.

World Barley and Oats Output at Record High

WASHINGTON—World production of barley and oats in 1955-56 is estimated at about 140 million short tons, on the basis of the latest information available to the Foreign Agricultural Service, U.S. Department of Agriculture.

A production of this size would be the largest of record, with barley production at an all-time record and the outturn of oats the largest of the postwar period. The current estimate of the two crops combined is 3% above the large 1954-55 harvest and 9% above the 1945-49 average, USDA reports.

The world crop of barley and oats is now about evenly divided, on a tonnage basis, whereas in the prewar period oats accounted for a larger proportion of the total, averaging about 55% during 1935-39.

Production of oats, now estimated at 4,450 million bushels, though somewhat below the record of 4,985 million estimated for 1928, shows a substantial increase over any other postwar year and is 14% above the 1945-49 average. The record oats crop in the U.S. is an important factor in the increase, USDA says.

World barley production is estimated at 2,875 million bushels, which is a third larger than the small 1945-49 average. Production in 1955 was estimated substantially larger in most production areas, but the bulk of the increase was in North America and Western Europe, according to USDA.

New Director Named By Colorado Milling

DENVER—Alonzo Petteys, Brush, Col., banker, has been elected a director of the Colorado Milling & Elevator Co., Denver, it was announced by Robert M. Pease, president of the firm.

Mr. Petteys fills the vacancy caused by the recent death of Fred W. Lake, chairman of the board. The position of chairman has been abolished.

Announcing a New Step in Jay Bee Progress
JAY BEE
NEW MODEL 4SWF
WITH SEPARATE FAN AND CONSTANT FEED CONTROL

MODEL 4SWF
20-INCH THROAT
SEPARATE FAN
New design provides separate eight-inch high - efficiency fan powered by separate 25 H.P. Motor. Ideal for installations where distances exceed 60 ft. from mill to collector. Available on both Jay Bee Models SW (General Grinding) and W (Heavy Grinding).
YOU'LL LIKE THESE JAY BEE FEATURES
● CONSTANT FEED CONTROL—This JAY BEE method of suspension grinding holds stock in contact with hammers by weight of stock, giving cooler, more uniform grind. Available with remote control assembly.
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This team has developed, produced and brought farmers a complete line of poultry and livestock feeds! And NOW . . . the MASTER MIX TEAM is featuring a great feed and promotion . . . THE MASTER MIX BIG-10-BENEFIT CHICK STARTER PLAN.

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Get the facts . . . let the Ultra-Life Program help you sell more feed in 1956.

Write today for complete details about the exclusive Ultra-Life feed manufacturing and service selling program that gives you top sales advantage.

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Summary of C/P Ratios Given

A summary of estimated calorie-protein ratios for use in formulation of poultry rations was given recently by Dr. G. F. Combs of the University of Maryland. (See Table 1.)

As he has pointed out previously, Dr. Combs noted in a paper presented at the Kansas Formula Feed Conference that Maryland studies have indicated that a ratio of approximately 42 calories of productive energy per pound of ration for each per cent protein is satisfactory in starting feeds. Also, a C/P ratio of 48 to 50 appears satisfactory for use in broiler finishing rations.

Based on calculation, it is estimated that hens laying at the rate of 55% of production should be supplied rations with a C/P ratio of approximately 62, Dr. Combs said. For higher producing hens, laying at the rate of approximately 90%, the ration should have a C/P ratio of approximately 56.

Based on these ratios, 4-lb. hens laying at the rate of 55% would require approximately 13.2, 14.0, 14.8 and 15.6% protein in rations with 830, 880, 930 and 980 calories of productive energy per pound, respectively. On the other hand, 4-lb. hens laying at the rate of 90% would require 14.6, 15.5, 16.4 and 17.3% protein in their rations containing 830, 880, 930 and 980 calories of productive energy per pound, respectively.

Dr. Combs said the level of egg production and the energy level of the feed are considered to be the most important factors that determine the most efficient level of protein to be supplied in the total ration for layers.

For turkeys, Dr. Combs said, C/P ratios of approximately 30, 40, 50 and 60 are suggested for use in starting rations (0 to 6 weeks), growing rations (6 to 12 weeks), growing rations (12 to 18 weeks), and finishing rations (18 to 24 weeks), respectively. For adult breeding turkeys, a ratio of 60 also is considered satisfactory. These are based on limited information, Dr. Combs said, but are considered satisfactory for use until more exact values become available.

Several factors would be expected to influence the selection of the most satisfactory C/P ratio for a given feed. Among these would be quality of protein, rate of growth, rate of egg production in relation to body size, environmental temperature, degree of finish desired, differences in composition values used in calculation of feeds, and finally, changes in relative market cost of energy and protein as ingredient prices change.

Table 1—Estimated Calorie - Protein Ratios* for Use in Formulation of Poultry Rations

Ration*	C/P ratio**
Chicken—	
Broiler and chick starter (0-6 weeks)	42
Broiler finisher (6-9 weeks)	49
Laying or breeder ration:	
50% production	64
70% production	59
90% production	56
Turkey—	
Starter (0-6 weeks)	30
Grower No. 1 (6-12 weeks)	40
Grower No. 2 (12-18 weeks)	50
Finisher (18-24 weeks)	60
Breeder	60

*Total ration basis.

**C/P ratio = Cal. prod. energy (Fraps) / Crude protein, %

Amino Acids

As another part of his paper, Dr. Combs presented figures and comments on amino acid requirements in poultry feeds. To maintain adequacy properly with respect to the amino acids most likely to be critical in poultry feeds (methionine, lysine and tryptophane), perhaps the most satisfactory way of approaching the problem, he said, is (1) to first determine the quantity of protein re-

Table 2—Amounts of Certain Essential Amino Acids Required in Poultry Rations, Expressed as a Percentage of Total Crude Protein in the Total Ration.

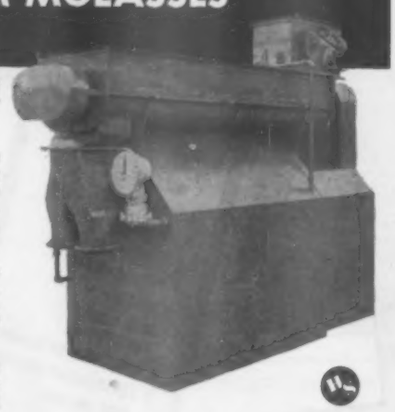
Ration	Methionine**	Lysine	Tryptophane	Arginine
	Per cent of crude protein			
Chickens—				
Chick and broiler starter (0-6 weeks)	2.15*	4.5	1.0	6.0
Broiler finisher (6-9 weeks)	2.15*	4.5	1.0	6.0
Laying or breeder mash	1.87	3.3	1.0	?
Turkeys—				
Starter (0-6 weeks)	1.86	5.3	0.93	5.7
Grower No. 1 (6-12 weeks)	1.86	5.3	0.93	5.7
Grower No. 2 (12-18 weeks)	1.86	5.3	0.93	5.7
Finisher (18-24 weeks)	1.86	5.3	0.93	5.7

*All values except these are based on requirements given in NRC Pub. No. 301, Nutr. Requirement for Poultry.

**In presence of ample cystine.

APPLY UP TO 50% LIQUID With H&S TANDEM MOLASSES MIXER

LIQUID APPLICATION ACCURATE AS LOW AS ONE PERCENT



Hayes & Stolz new all-purpose mixer applies liquids to both light and heavy feeds. Using slow speeds and tandem mixing principle up to 50% liquid may be applied on absorbent ingredients.

Two rows of easily accessible mixing paddles are contained in double U troughs. Paddles are adjustable to control intensity of mixing action.

The new H&S Tandem Molasses Mixer is equipped with: Meter flow pump, separate powered feeder, 500 gallon heating tank, water tubed electric heating element and electric liquid level control . . . everything needed to liquid coat formula feeds in a space saving, compact single unit.

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FEEDING ROLLED OATS
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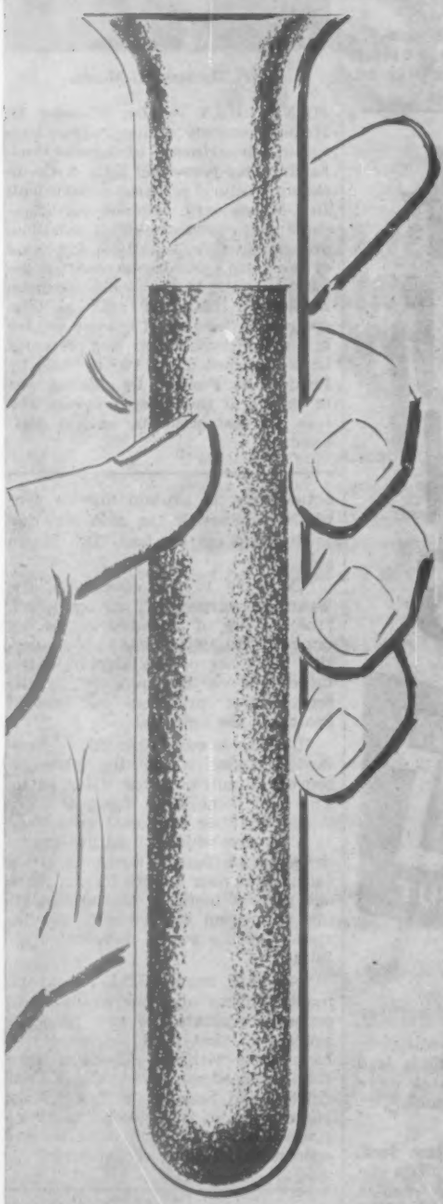

Findings to date prove that a supplement showing high phosphorus solubility in all these chemical tests can be correlated with good biological availability.

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YOUR SUPPLEMENT	CDP 17%	Analytical reagent grade dicalcium phosphate	Phosphorus extracted by
PERCENT	PERCENT	PERCENT	⬇
	99.8	100	0.4% HCl
	95.1	97.7	2.0% citric acid
	93.5	99.5	neutral ammonium citrate

No *one* solvent is entirely dependable in measuring the availability of phosphorus supplements. Conclusions drawn by researchers point out that high solubility in *only* 0.4% *HCl* does *not* indicate a high feed utilization.

CDP shows high availability in all *three* determinations, confirming excellent results in a variety of feeding tests.

The lowest cost, quality phosphorus product, CDP (Coronet Defluorinated Phosphate) is produced in two grades to meet your requirements.

	17% P Grade	14.5% P Grade
Phosphorus, Total	17.0% min.	14.5% min.
Calcium, Total	34.0% min.	34.0% min.
Fluorine, Total	0.17% max.	0.145% max.

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quired to balance the energy in a feed and (2) to multiply the level of protein in the feed by the percentage of each essential amino acid which should be present in the protein.

In other words if a broiler starting feed contains 1,000 calories per pound, this ration should contain approximately 23.8% protein to give a C/P ratio of 42. If the minimum methionine level is 2.15% of the protein, then the level of protein multiplied by 2.15% gives a value of 0.512%, which would be the approximate amount of methionine that should be supplied in this feed.

The percentages of these amino acids required (on the basis of per cent of protein) for starting and laying feeds are shown in Table 2. These values can be multiplied by the per cent of protein in the ration to obtain directly the approximate minimum amount of these essential amino acids needed in practical feeds.

Scientist Comments On Sprouted Grain As Animal Feed

A U.S. Department of Agriculture scientist commented recently on the proposed use of a process of growing sprouted grains in cabinets as a source of nutrients for livestock.

The scientist, Dr. L. A. Moore of the dairy husbandry research branch of USDA, said it is unlikely that the process has very much value for the economical feeding of livestock.

Speaking at the recent Kansas Formula Feed Conference on dairy nutrition developments, Dr. Moore noted that about 20 years ago, an attempt was made to introduce the "Spangenberg process" of growing sprouted grains.

The grains, corn, barley, oats, etc., are sprouted in trays in a cabinet in contact with a hydroponic or nutrient solution. After 8 to 10 days of growth, the tray contains a mass of green material and roots. For instance, 1 lb. of corn will produce 4 to 5 lb. of green feed material. Dr. Moore said a process is now being offered for sale which is similar to, if not identical with the Spangenberg process.

This process, he continued, was investigated quite extensively in England between 1925 and 1935. The results reported, where controlled experiments were conducted, were not advantageous for the process. Some investigators reported a loss of 25% of dry matter as a result of the sprouting process. This loss in dry matter would mean a corresponding loss in energy value of the feed. This respiration loss would be expected since the sprouts were not exposed to sunlight to permit the synthesis of energy-bearing nutrients.

Some analyses showed a gain in protein percentage, but it is not clear from the data where there was an actual gain in protein due to synthesis or whether the gain was due to the dry matter loss, Dr. Moore said.

"Contrary to the claims for the 'Spangenberg process'," he continued, "the feeding of sprouted grains did not result in an increase in the digestive processes of the animals. Also, there was no improvement in the reproductive processes of general health of the animals.

"In this present day trend of grassland farming where the principal source of nutrients for dairy cattle should come from forages, there would be little economic advantage to a process which would use grains in place of forage nutrients. If a farmer has poor quality forage, there are present methods of supplementing the ration economically, for instance by the use of dehydrated alfalfa.

"No data from USDA or experiment stations are now available to properly evaluate the new proposed process so that final judgment will have to be withheld. However, since the feeding of sprouted grains did not catch on in England or the U.S. 20 years ago, it is unlikely that the process has very much value for the economical feeding of livestock."

Dr. Thomas M. Means

JOINS LILLY — Dr. Thomas M. Means, formerly of the Purdue University department of animal husbandry, has joined Eli Lilly & Co. in the agricultural research department. Dr. Means will conduct investigations in the field of animal nutrition, according to Dr. J. F. Downing, head of the Lilly agricultural research department. Dr. Means graduated from Purdue in 1949. In 1952 he was awarded a master of science degree in animal husbandry, and recently he was awarded his Ph. D., also by Purdue. At Purdue, Dr. Means was in charge of the sheep program and was an instructor in animal husbandry.

Self Feeding Grit Units Step-Up Sales and PROFITS

Standard Pack, Approx. 10 Lbs.
King Size Pack, Approx. 22 Lbs.

Your Grit sales go up when you Display-Feature-and Sell Easy to Stack, Self Feeding GRAN-I-GRIT Feeder Packs. They SAVE Poultry Raisers, Dealers and Jobbers both Time and Labor handling heavy Bags and release valuable storage space.

GRAN-I-GRIT HAS EYE APPEAL

Tests by leading poultry authorities have proven that layers prefer a grey grit with dark specks . . . the GRAN-I-GRIT TYPE . . . as much as 10, 15 and even 100 to one over grit of other colors.

GRAN-I-GRIT

THE GRIT WITH THE SHARPEST GRINDING EDGES EVER CUT

GRINDS FEED FINER

GRAN-I-GRIT, with its sharper grinding edges, grinds feed finer in the gizzard. Finer grinding of feed releases more nutrients from the grains and grasses that birds consume.

BETTER USE OF FEED

Because GRAN-I-GRIT releases extra nutrients from feed, your birds get more body-building nourishment. Pullets develop bigger, stronger and faster with less feed and when in production they produce the same number of eggs with LESS FEED AND WITH LESS COST.

These extra nutrients also help speed the growth and feed conversion of broilers. Faster growth and quicker marketing of broilers means better profits.

USED BY LEADING POULTRY BREEDERS

Leading poultry breeders and Top commercial egg producers use GRAN-I-GRIT. They know how GRAN-I-GRIT helps improve livability of chicks, growing stock and layers, and how GRAN-I-GRIT's New King Size Feeder Pack is unbeatable where birds are separated into breeding pens.

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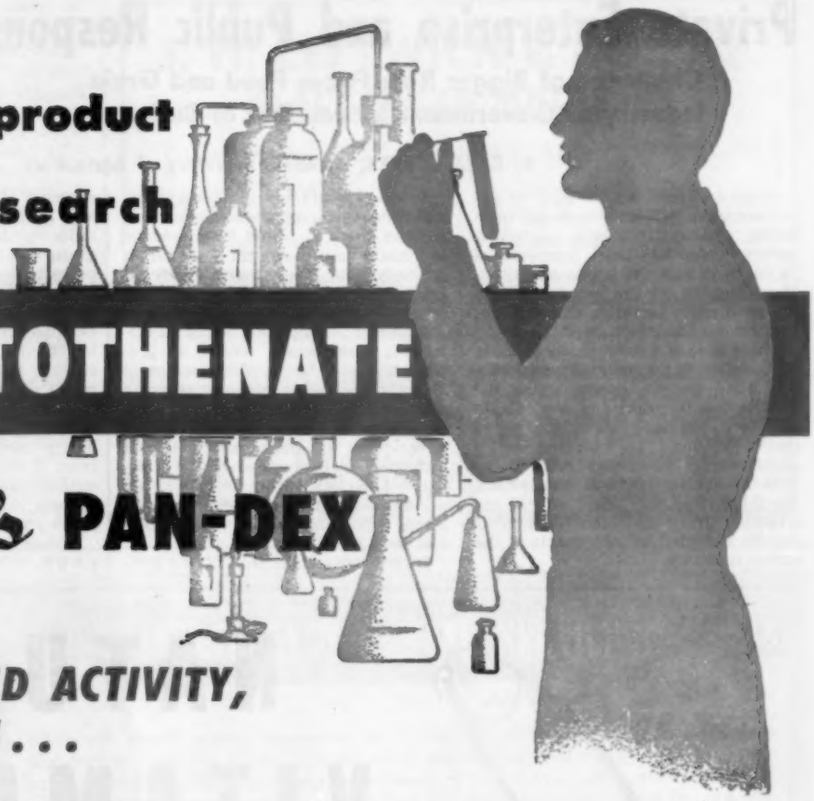

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Private Enterprise and Public Responsibility

Challenge of Bigger Role Faces Feed and Grain Industry as Government Moves Out of Business

By EARL L. BUTZ, Assistant Secretary of Agriculture

EDITOR'S NOTE: Feed and grain men need to be prepared for a bigger role as the government begins to move out of the feed and grain business, Dr. Butz states in the accompanying article, which consists of excerpts from a talk he gave at the recent convention of the Indiana Grain & Feed Dealers Assn. He points out the tremendous part government plays today in the feed and grain industry, but says that the Eisenhower administration is doing everything it can to turn the functions of buying, storing and selling farm products back to private enterprise. The industry, he warns, must be ready to assume primary responsibility for efficient and effective distribution of grain and feed if it wants to stay private.

Grain and feed dealers play an important part in the agricultural marketing system. This is a marketing system which has been described as "a chain joining the wants and needs of consumers on the one hand with the productive facilities and skills of farmers on the other hand."

There are, of course, many links in that chain. But none is more important than the one encompassing the distribution of grain and feed. Grain and feed are raw materials, so to speak, required in carrying on a great many other agricultural as well as non-agricultural enterprises. Anything, therefore, that affects the strategic grain and feed industry is rapidly reflected to other parts of the entire economy.

I wish I could say that everything affecting your important industry is for the good. It would be wonderful if I could assure you that—as far as anybody can see—your future is bright and rosy. Perhaps, in many respects, it is.

However, I feel duty bound to discuss a development which, if perpetuated, will be decidedly unfavorable for private or cooperative grain and feed marketing. I refer to the big-scale operations of the federal government in the grain and feed business—operations which, if they are not curtailed, threaten to crowd private enterprise progressively into a less important position in the grain and feed picture.

Increasing competition of the government cannot be traced directly to any particular shortcomings of your industry. As a matter of fact, modern grain and feed marketing under the private enterprise system has been characterized by some highly efficient operations. Your industry, for example, has responded magnificently to the increased demand for more storage space which has arisen as a result of expanded production.

From 1951 through 1954, off-farm commercial-type grain storage capacity rose on a nationwide basis, from 2,176 million bushels to 2,820 million—an increase of 644 million bushels within the short space of three years.

I should also like to point out that your industry, by improving the quality of feeds, has helped livestock producers, dairymen, and poultrymen do a far more effective production job than was the case even 10 years ago.

Feeds—we used to call them "mixed feeds"—are today, with good reason, referred to as "formula feeds." Modern feedstuffs, with their antibiotics, trace elements, and carefully proportioned nutrients, actually are more complicated than many of the prescriptions that are filled by druggists.

Competition from Government

But even so, the grain industry's operations under the private enterprise system are potentially endangered by activities of the government. The extent of the encroachment is revealed by the government's own figures.

Late in 1955, the Commodity Credit Corp. owned grain costing $3,862,000,000. This included 899 million bushels of wheat, which cost $2,415,000,000, 742 million bushels of corn, costing $1,267,000,000, and about 55 million bushels of grain sorghums, costing $88 million. Its holdings of barley, oats, and rye, totaling 81 million bushels, were acquired at a cost of $92 million. In addition to its inventories, CCC also had made loans of $777 million on 513 million bushels of grain. CCC's total investment in grain, then—acquisition cost and loans combined—was $4,638,000,000.

Don't think for a minute that CCC's investment is completely in grain. Goodness, no! CCC's funds also are tied up in cotton, cottonseed oil, cotton linters, dairy products, rice, soybeans, flaxseed, linseed oil, tung oil, dry beans, wool, tobacco, rosin, turpentine, alfalfa seed, fescue seed, and last, but not least, birdsfoot trefoil seed.

CCC's total investment late in 1955—in grain and other products—was the staggering sum of $8,207,000,000.

The extent of the government's potential competition with the private grain trade also can be measured by figures on grain moved out of CCC's price support inventory.

Between Jan. 1, 1953, and Nov. 30, 1955, CCC disposed of 1,221 million bushels of grain, which had a value of $2,652,000,000. These totals include 502 million bushels of wheat, costing $1,438,000,000 and 454 million bushels of corn, costing about $830,000,000. Over this same period, CCC's total disposals—of grain, cotton, dairy products and other commodities—had a cost value of $4,698,000,000.

As you know, it is the policy of CCC to use private trade channels wherever possible to implement all sales of CCC commodities. However, sometimes the pressure grows rather intense for direct transactions which would circumvent established trade

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channels. This is particularly true in the case of export business.

There is still another way to measure the competition of big government with the private grain trade—and a very good measure it is. I refer to the government's grain storage program, which has expanded by leaps and bounds in recent years.

In June, 1949, CCC owned 45 million bushels of bin-type storage capacity for use in storing CCC-owned grain. But grain production, stimulated by price supports maintained all too long at World War II incentive levels, continued to mount. As the surpluses built up, storage facilities had to be extended. In 1950 CCC's grain bin storage capacity was increased to 373 million bushels, in 1951 to 550 million, and in 1953 still further to 648 million bushels. Today, CCC's bin storage capacity totals 884 million bushels.

But that's not all. Now CCC-owned wheat is stored on 384 idle merchant ships. These ships are providing storage for approximately 88 million bushels of wheat.

I think I have cited enough figures to demonstrate that you have a competitor—and a big one—in your own government. It is difficult to explain how, in a nation that has always been proud of its private enterprise—proud of the individual "get-up-and-go" of its people—we ever let the government become such a competitor in the first place. It is still more difficult to explain why we actually encouraged it.

More Leaning on Government

For a starting point, we must look into our minds and analyze our own attitude toward government. If we are honest in this self-appraisal, we'll have to admit that in the past 20 years or so there has been an increasing tendency for private enterprise—business as well as agriculture—to lean more and more on government.

Today "security" has become the watchword. We wanted security for farmers. In our search for it, we legislated what we referred to as "fair" prices. That would have been fine if, at the same time, we had paid heed to fundamental demand and supply relationships. But we didn't. We put prices at artificial levels without effective measures to maintain consumption rates or to curb production increases. We have reaped, as a result, the inevitable harvest—the largest agricultural surpluses in the history of this or any other country.

Like ripples on a pond, the government's operations have spread, one "emergency" agitating another, and so on. High "emergency" support prices, maintained long after the emergency was over, brought surpluses. Soon the surpluses began to clog the lines of distribution.

Here, of course, was another "emergency." The government had to siphon the surpluses out of the sluggish marketing channels. Before long we had a storage emergency. As warehouses and bins filled up, we had a disposal emergency. In the process of coping with all these emergencies, the government has increasingly become your potential, if not your actual competitor.

Preference for Private Business

Let me make one very important point clear. This administration is completely and honestly dedicated to do its best to use the private marketing system in carrying on its various stabilization operations. The Commodity Credit Corporation Charter Act provides that "In the corporation's purchasing and selling operations . . . and in the warehousing, transporting, processing, or handling of agricultural commodities, the cor-

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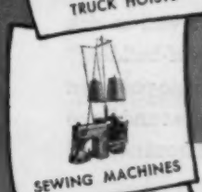
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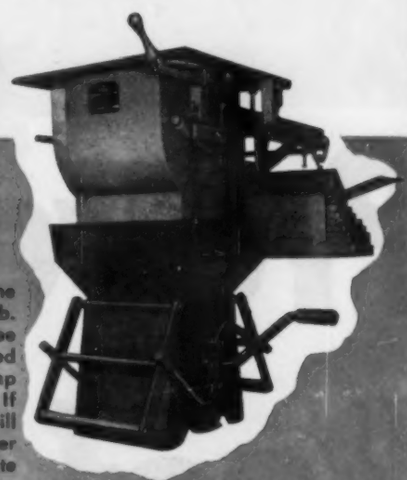

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poration shall, to the maximum extent practicable . . . utilize the usual and customary channels, facilities, and arrangements of trade and commerce."

This administration is rigorously following the spirit as well as the letter of that law. The private grain trade has, of course, been brought into the over-all storage and handling picture to the maximum extent possible. Under its emergency storage program, for example, USDA has done its best to locate government-owned bins only in areas where existing facilities were inadequate.

But the government, despite all its efforts and good intentions, remains a competitor—and a powerful one. It's a situation nobody can be really happy about.

In a very real sense the government has become the dominant factor affecting the domestic grain and feed market. A few years ago the trade looked to government primarily to supply reliable statistics on production, storage figures, marketings and the like. The trade also looked to government to enforce the "rules of the market" as an impartial referee.

Today the government, through the massive operations of CCC, is much more than an impartial referee. It has become the strongest player in the game. It therefore occupies the unique position of being both referee and player at the same time. To do this job skillfully and without injury to other players requires a great deal more finesse, wisdom and ability to withstand a wide variety of pressure than the Creator endowed upon the average government official.

All too frequently the grain trade finds itself asking not about current developments in supply, demand, utilization, and the like, but rather finds itself trying to discern what decision will be forthcoming tomorrow from Washington. This places management of our privately operated grain and feed marketing system in a very difficult, if not impossible, position.

I know that responsible and thinking men in the grain and feed industry are looking forward to the day when government gets rid of its last dollar's worth of surplus farm products and once more turns the functions of buying, storing, and selling back to private enterprise.

New Farm Program

A significant step was taken in the direction of getting government out of the surplus farm product business when President Eisenhower sent his special farm message to the Congress. The President said, "Clearly new action is imperative. We must stop encouraging the production of surplus. We must stop shifting acres from one crop to another when such shifts result in new surpluses. Nor can crop problems be converted into millstones weighing upon the producers of livestock."

The President then went on to urge passage by the Congress of a nine-point program designed to meet the surplus problem, and at the same time to strengthen the entire fabric of American farm life.

Agriculture didn't get into its present situation overnight, and it won't get out of it in a day either. But it will move out, steadily and surely, under the basic pattern set in the Agricultural Act of 1954, supplemented by the legislative recommendations in the President's message. Farmers will again be able to share adequately in the rising prosperity which America enjoys.

Is Industry Ready for Bigger Role?

The transition period will be a challenge to the private marketing system in general, and to the grain and feed industry in particular. As surpluses decrease, so will government competition in the grain and feed business decrease. This will mean, conversely, a bigger role for private enterprise.

Business has been relatively "easy" in the grain and feed industry the past few years. There has been a big volume of "government business." This has grown larger each year. Government money—for storing and handling services—has poured out, in an uninterrupted stream—with little or no risk attached.

As new storage facilities were needed, provision was made for construction under special tax arrangements. Once they were constructed, near capacity use was virtually guaranteed by the growing hoard of government-owned commodities. It was easy, under these circumstances, for some individual managers to grow complacent about aggressive merchandising and good management—two absolute essentials in the years before the government became so heavily involved in the grain business.

As CCC grain stocks are reduced in the years ahead, the government will have less need for the marketing services you have been providing it. The industry must then look for business instead of, as now, business looking for the industry. The industry must begin to assume more of the ordinary business risks inherent in the privately operated competitive marketing structure.

Time for "Practice"

This is the time, today, for the feed and grain industry to begin "practicing," so to speak, for its bigger role as the grain and feed business begins to move out of government hands.

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stay private, and wants to keep control in its own hands, then it must assume primary responsibility for efficient and effective distribution of grain and feed from producer to consumer, or from processor to producer. This involves imaginative management, risk assumption, aggressive merchandising and realistic pricing. In short, it means rendering a service to your producers and to your processors so effective and so efficient that you constantly demonstrate to your community that the private market system can perform its historic function well in an environment of free competition.

Otherwise, the government will continue to be the most important player on the team, even though at the same time it also continues as the referee. What private enterprise fails to do, big government must and will do.

One of the great challenges facing all of us is to see that our economy is not dominated by government—that government helps rather than displaces private enterprise. We can do this only if we are willing to throw our influence on the side of keeping government the servant of all of us —not our master.

This country became great under the private enterprise system—some people call it the profit system. We must always make room in the American system for a legitimate profit. We must counter political demagogues who curry favor from their listeners by attacking those who have been successful beyond mediocrity. There is nothing sinister in the word "profit." It provides one of the strongest incentives possible for production, for prosperity, for advancement.

If you who are engaged in the free enterprise marketing system will always assume a sense of public responsibility to make the system work, our country can only advance to still greater levels of prosperity under the profit system.

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American Dairy Science Meeting Set

STORRS, CONN. — The American Dairy Science Assn. meeting has been scheduled for June 18-21 at the University of Connecticut.

W. R. Hesseltine, extension dairyman at the university, is making arrangements for the meeting.

Use of Barley For Feed Way Up In Half of Year

WASHINGTON—Disappearance of barley for feed during the July-December period of the 1955-56 season amounted to 130.6 million bushels, compared with 107.8 million a year earlier, 77.6 million two years earlier and 80.6 million the five-year (1948-53) average, according to a report issued by the U.S. Department of Agriculture.

Disappearance of barley during the first six months of the season for all purposes totaled 228.8 million bushels, compared with 175.1 million bushels a year earlier, and is the largest for the period since 1943.

Exports of barley were the largest of record at 48.5 million bushels. The use of barley and malt, in terms of barley for fermented malt beverages and food, totaled 44 million bushels, slightly above the 43.7 million bushels in the same period a year earlier.

USDA reports that stocks of barley on Jan. 1 totaled 303 million bushels, 20 million more than a year ago and the largest of record. Domestic supplies for 1955-56 were 521 million bushels, as compared with 442 million for the 1954-55 season. Imports the first six months totaled 11 million bushels, the smallest for the period since 1951.

World production of barley this season is 45 million more than a year ago. Canada's barley crop is the fourth largest of record.

Sales of barley by the CCC July through Dec. 28 amounted to 52 million bushels. This is more than double the amount sold during the comparable period a year earlier. Of the sales this season 49 million bushels were sold for export.

Prices Down

Barley prices at the farm the first six months this season averaged 91¢ bu., 14¢ less than for the same period last season and was the lowest since 1942. No. 2 malting barley averaged $1.27 bu. at Minneapolis in January, the low point for the season and compares with $1.49 in January 1955 while feed barley averaged 84¢ as against $1.03 a year ago. The national average support price for 1955-crop barley is 94¢ bu. compared with $1.15 for the 1954 crop.

Through Dec. 15 farmers placed 66.7 million bushels of barley under price support compared with 84.9 million for the same period last year, according to USDA.

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Oats Disappearance During First Half of Season Highest Since 1946

WASHINGTON—Disappearance of oats the first half of the 1955-56 season totaled 809.2 million bushels, compared with 727 million the first half of last season. This was, according to a report issued by the U.S. Department of Agriculture, the largest for the period since 1946.

Disappearance of oats in both the first and second quarters this season was sharply above the comparable period a year earlier.

The use of oats for feed the first half of this season amounted to 766.6 million bushels, the second largest of record, USDA reports. This compared with 695.5 million bushels fed July-December last season and 674.8 million the 5-year (1949-53) July-December average. Disappearance of oats for feed per grain-consuming animal unit, July-December this season, was 4.4 bu., compared with 4.1 bu. fed last year.

Exports of oats July-December totaled 12.2 million bushels compared with 961,000 bu. for the same period a year ago, and exceeded only by the 13.3 million exported the first six months of the 1946-47 season.

Stocks of oats in all positions on Jan. 1 totaled 1,082 million bushels. This is 7% more than the 1,014 million bushels on Jan. 1, 1955, and the largest of record.

Farm stocks on Jan. 1 totaled 981 million bushels, 7% more than the 921 million a year ago and 18% above the 1945-54 average of 829 million. Commercial stocks at terminals amounted to 26.6 million bushels, as against 20.1 million Jan. 1, 1955. Interior mill and elevator stocks, at 68.8 million bushels were 8.4 million more than a year ago, while CCC stocks in bins and warehouses owned or controlled by CCC at 5.7 million were 7 million less than on Jan. 1, 1955, according to USDA.

Domestic Supplies Largest

Domestic supplies of oats for the 1955-56 season at 1,890.4 million bushels were 160.3 million more than a year ago, 333.1 million above the 5-year (1949-53) average and the largest of record. Imports the first six months this season were the smallest since 1947 and totaled 1.1 million bushels. This compares with 10.9 million imported the first half of the season a year earlier.

The 1955 oats crop of 1,576 million bushels is 78.7 million more than the 1954 crop and 3% above the previous record crop produced in 1945. The U.S. yield of 38.5 bu. per acre is the highest of record, 3.1 more than a year ago and 5.1 bu. above average. Carry-over stocks of oats July 1 were the largest of record at 314.7 million bushels.

World production of oats, estimated at 4,450 million bushels is 155 million more than the 1953 crop, 14% above the 1945-49 average but is 535 million less than the record crop in 1928.

USDA reports that sales of oats by the CCC July 1-Dec. 28 amounted to 23.3 million bushels. This is about double the 11.9 million bushels sold during the comparable period a year ago. On Jan. 1, the CCC owned 31.5 million bushels of oats in all positions.

Oats prices on the farm the first six months this season averaged 59¢ bu. compared with 72¢ for the same period a year ago and were the lowest since 1942. The national average support rate for 1955-crop oats is 61¢ bu., or 14¢ less than the rate for the 1954 crop.

Farmers placed 51.9 million bushels of 1955-crop oats under price support Dec. 15 compared with 60.5 million of 1954-crop on Dec. 15, 1954.

INCORPORATION COMPLETED

BOSCOBEL, WIS. — Incorporation papers for the G-C Farmers Cooperative of Boscobel, Wis., have been filed.

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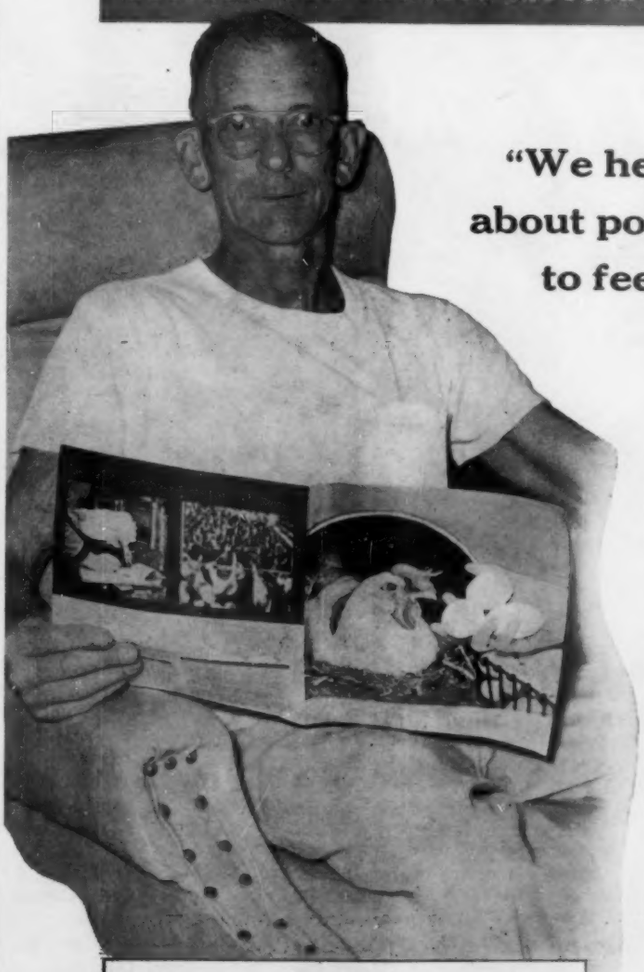
HOW UNION BAG BUILDS MORE BUSINESS FOR THE FEED INDUSTRY



"We hear a lot these days about poultrymen converting to feed in 50-lb. bags"

Richard McClintic, poultry grower, Lutz, Fla.

"When my feed dealer first recommended 50-lb. paper sacks," says successful poultryman Richard McClintic, "I might not have tried them if I hadn't read about them in a poultry magazine. From what I see and hear, just about everyone who's given them a trial has been convinced of the benefits of this way of handling feed."

Union Bag sponsors educational program

Poultryman McClintic probably got some of his information from news stories and articles provided farm publications, radio and television stations by Union Bag. Hundreds of these helpful short features that stress the use of manufactured feed and other good management practices as keys to farm profits have been published, broadcast and telecast.

Our stake? More successful poultry and livestock men are better customers for feed. You package some of the finest feed. We make some of the best Multiwall sacks used in the feed industry. Combine two outstanding products and everyone should benefit.

Don't you agree?

Jackson Grain Company, a leading Florida feed manufacturer, packages its poultry and livestock feed in Union Multiwall Bags.

Mr. Ernest MacBryde, Vice President, Sales Manager, Jackson Grain Company, Tampa, Fla. "The information Union Bag is furnishing will be of much value and benefit to farmers and poultrymen."

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Sales and Earnings of IMC Show Decrease

CHICAGO — Net sales of International Minerals & Chemical Corp. for the second quarter of its current fiscal year, the three months ended Dec. 31, 1955, amounted to $21,632,515, a decrease of 3% from $22,282,396 for the second quarter of the previous year ended Dec. 31, 1954.

Earnings before income taxes amounted to $1,436,359 for the quarter compared with $1,750,928 for the corresponding period in 1954. Net earnings after taxes were $1,314,359, which was equivalent to 52¢ a share on the common stock outstanding, compared with $1,443,928, which was equivalent to 58¢ a share on the common stock outstanding a year before.

Net sales of the corporation for the six months ended Dec. 31, 1955 were $37,620,755, a decrease of 4% from $39,338,744 for the first half of the preceding fiscal year.

Earnings before income taxes for the six months ended Dec. 31, 1955, were $576,850 compared with $2,512,283 for the same period in 1954. Net earnings after taxes for the six months were $454,850 compared with $2,005,283. The after tax earnings for the six months were equivalent to 11¢ a share on 2,331,687 shares outstanding at Dec. 31, 1955, compared with 78¢ a share on 2,326,297 shares outstanding at Dec. 31, 1954.

Both sales and earnings for the six months ended Dec. 31, 1955 were adversely influenced by the costly four months' strike in the Florida phosphate fields which was not settled until Oct. 1, 1955. It is anticipated that earnings for the six months ended June 30, 1956 will be considerably better than for the corresponding six months ended June 30, 1955, since several of the corporation's new facilities which, during start-up were a burden to earnings, have now reached break-even stages.

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MANAGEMENT CHANGES

THERESA, WIS.—The Koll Feed & Fuel Co. here is now under the management of Ralph W. Koll. Miss Marie Koll has disassociated herself from the business.

Dr. Lester E. Hanson

L. E. Hanson to Head Minnesota Department

ST. PAUL, MINN.—Lester E. Hanson, professor of animal husbandry at the University of Minnesota, will become head of the University of Minnesota animal husbandry department on July 1, it has been announced by the Board of Regents. He will succeed E. F. Ferrin, present head, who retires June 30 after 35 years of service to the university.

Dr. Hanson had been honored recently by the American Society of Animal Production as the nation's "outstanding research worker in animal science for 1955."

The retiring head of the department, E. F. Ferrin, recently was named to Minnesota's "Livestock Hall of Fame" by the Minnesota Livestock Breeders Assn.

Dr. Hanson is known for his work in swine nutrition. His work includes studies on brood sow reproduction and lactation, development of starter and creep rations for baby pigs and study of arsenicals, antibiotics, fiber, protein levels, distillers solubles and vitamins for growing hogs.

A native of Minnesota, he was graduated "with distinction" from the University of Minnesota's Institute of Agriculture in 1936 and earned his master's degree at Cornell University in 1937 and his doctor of philosophy degree there in 1940. He also held a fellowship in the American - Scandinavian Foundation for study of Danish animal husbandry in 1937-38.

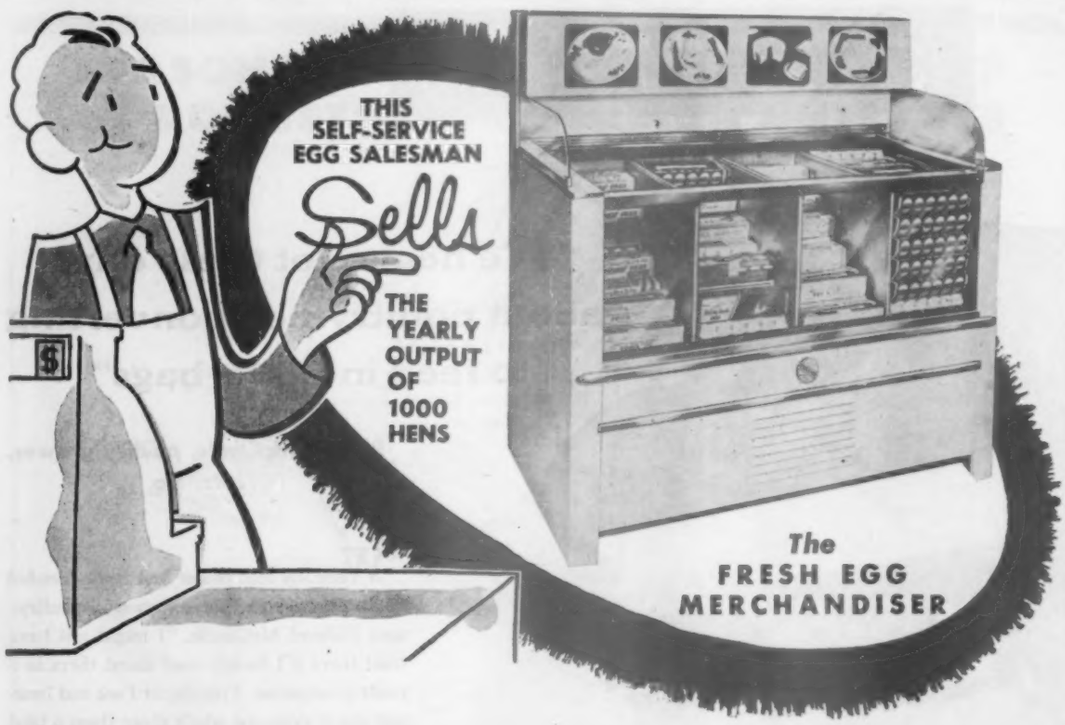
Dr. Hanson joined the University of Minnesota staff in 1950, after teaching and conducting research at the University of Nebraska for 10 years. He is a member of several national research societies, including the American Association for the Advancement of Science and the American Association of University Professors.

Webb P. Kyle, Albers Vice President, Dies

LOS ANGELES—Webb P. Kyle, vice president in charge of grain buying for the Albers Milling Co., died Feb. 6 at St. Vincent's Hospital following a prolonged illness. He was 61.

Mr. Kyle, who entered the grain and milling field following overseas service in World War I, was at one time a partner in Kyle Bros. Grain Co., Spokane, Wash. He was a native of Colton, Wash.

In 1926 he joined Albers at Seattle as a grain buyer, became manager of the Albers Seattle mill in 1930 and was named a vice president of the milling firm in 1936. In 1948 he was transferred to the company's headquarters in Los Angeles and resided there until his death.



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A simple, easy and inexpensive method has been found to greatly increase consumer buying of fresh eggs . . . especially QUALITY eggs at premium prices. This proved method is to display eggs in food stores by themselves . . . instead of showing them in general display case with other foods. THIS ONLY CHANGE increases retail egg sales from 30% to over 50%. This fact has been PROVED beyond any question by the extensive tests during the past two years under the direction of the Marketing Departments of Cornell, Missouri and Nebraska Universities. In not one test, so far reported, has the increase in egg sales resulting from displaying eggs been less than 30%. The average increase has been 44%.

THE FRESH EGG MERCHANDISER will build BIG Tonnage for feed mills. Why? Because the mill that puts it to work in Super Markets . . . helps egg producers who use his feed get premium prices for their eggs.

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When the egg producer agrees, the mill salesman or dealer contacts the Super Markets and arranges for installation of the FRESH EGG MERCHANDISER at no cost to the Super Market. The egg producer delivers and takes care of servicing the display . . . getting top prices for his eggs in cartons supplied by the mill. (Carton cost to egg producers to include cost of leasing display . . . total about 3¢ per carton.) ACT NOW to put this program into effect in your territory. You need make no investment . . . just lease at $24.00 per month. For further details write Phil W. Tobias, Sr., **TOBIAS ENTERPRISES, 187 No. LaSalle St., Chicago 1, Illinois**

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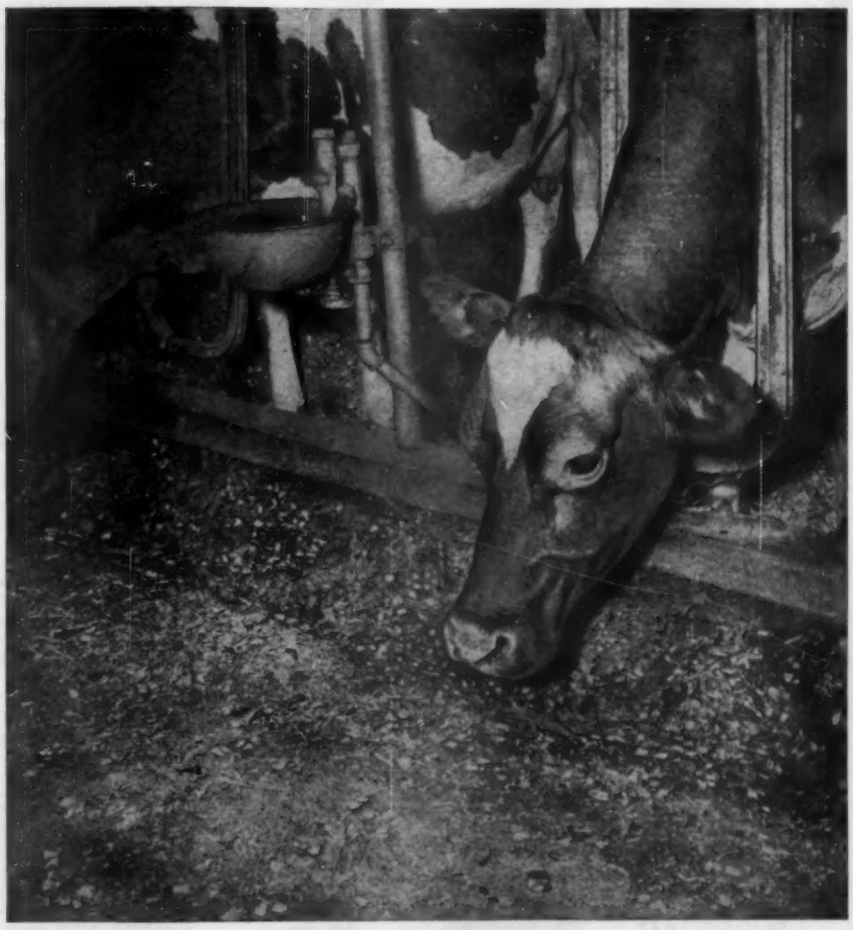

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Hog Raisers in Oregon Get More Profit With Barley

CORVALLIS, ORE. — Feed barley in Oregon can be converted to pork as cheaply as corn in the Midwest. And Oregon can use more locally-produced pork, according to Dr. Gordon Blanch, agricultural economist at Oregon State College.

Put these two facts together, he says, and you have the reason a market hog grown and sold in Oregon can return more cash to the farmer than one raised and sold in the heart of the Corn Belt.

Two thirds of the pork now sold in Oregon is shipped in from the Midwest, Dr. Blanch explains. That tends to raise the price of pork in the area. And, after a cost study of 43 sow-market hog operations in the Willamette Valley, northeastern Oregon, and the irrigated region in the central part of the state, Dr. Blanch is convinced that Oregon hog growers are just as efficient as those in the Midwest.

In his study, Dr. Blanch found it took an average of 438 lb. of barley, 18 lb. of protein supplement, 3 lb. of minerals and salt, 22 hog days of pasture, and 2.7 hours of labor for these producers to put 100 lb. of weight on a market hog and maintain the breeding herd.

Feed accounted for about 76% of the total cost of producing the hogs. Labor added another 14%, and capital and other costs came to around 10%.

Armed with these figures, Dr. Blanch set out to compute "break-even" prices between barley and hogs. He developed a method that can be used to estimate an up-to-date break-even price for market hog operations. Here are the steps he advises:

Steps to Use

1. Multiply the price per pound of grain by 438, the average amount of grain it took to put 100 lb. of weight on a market hog.

2. Divide the current parity index by 281; then, multiply the resulting figure by $6.50. The 281 is the parity index for 1951, and the $6.50 is the sum of the costs other than grain to produce a hog in 1951.

3. Add the two answers from the first two steps to get the break-even price.

Here's an example of how it works: If barley is selling for $40 a ton and the current parity index is 270, first divide $40 by 2,000 lb. to get the feed price per lb.—this comes out $0.02 lb. Then multiply $0.02 by 438, giving $8.76.

In the second step, divide 270 (the current parity index) by 281 (the 1951 parity index)—this gives 0.96. Multiplying this by $6.50 gives an answer of $6.24.

Now in the third step, add the two answers—$8.76 and $6.24—and that's the break-even price of $15 for each hundred pounds of hog, live weight.

This price means that if barley is selling for $40 a ton and hogs can't be sold for more than $15, a farmer is ahead to sell any barley he has on hand rather than feed it to the hogs, if he can use his time to advantage in other ways.

3 Losing Years

Using this method to compute break-even prices over the past 15 years, Dr. Blanch found that the average Oregon hog producer lost money in only three years—1940, 1944, and 1952. After each of these years, hog numbers in the state dropped sharply, indicating that Dr. Blanch's method of computing break-even prices is reasonably realistic with history.

The Oregon specialist emphasizes that hog producers must operate as efficiently as the 43 hog producers he studied if the method is to accurately predict the break-even price. If hogs are raised more efficiently, money can be made at an even lower price for hogs than the break-even price, he points out.

Detailed information about the study, and a simplified chart for determining break-even prices are in the winter issue of "Oregon's Agricultural Progress," published by the OSC experiment station. Copies can be obtained from the college at Corvallis.

J. P. Smith Manages Pfizer Chemical Sales

NEW YORK—J. Philip Smith, assistant to the senior vice president, Chas. Pfizer & Co., Inc., has been promoted to the position of general manager of the company's chemical sales division, it has been announced.

Mr. Smith joined Pfizer in 1933, working in the company's citric acid department. Five years later he was named a foreman in this department.

A graduate of St. John's University School of Law in 1943, Mr. Smith subsequently transferred to the company's legal division. He undertook varied assignments in legal work, including a two-year stay in Washington, D.C., as the company representative in the nation's capital.

In March, 1954, Mr. Smith stepped up to the post of assistant to the senior vice president.

Mr. Smith is active in such trade organizations as the DCAT (Drug, Chemical & Allied Trades), the Manufacturing Chemists Assn., American Pharmaceutical Manufacturers Assn. and American Drug Manufacturers Assn. He is a member of Phi Delta Phi, a legal fraternity. Mr. Smith is currently serving as chairman of the chemical, drug and cosmetic industries for the PAL, a New York Police Department-sponsored youth organization.

Paul E. Weber, appointed sales manager of Pfizer's chemical sales division in November, 1955, continues in that post, reporting to Mr. Smith.

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The Effects of Kinds of Rations On Carcass Quality in Poultry

• By Dr. Paul E. Sanford
Kansas State College

EDITOR'S NOTE: Of interest to poultrymen and feed men is the possibility that cereal grains used in poultry rations have an influence on per cent shrinkage and quality of poultry. With this and certain background data under consideration, the Kansas Experiment Station has conducted experiments to determine whether the different grains have an effect on shrinkage, to compare carcass quality of birds fed diets containing the various grains, to determine which grains give the most efficient and economical gains, and to compare growth on the various grains. This work, along with conclusions drawn, is described in the accompanying article by Dr. Paul E. Sanford of the Kansas State College poultry department. The article is from a report by Dr. Sanford at the Kansas Formula Feed Conference.

The use of any feed ingredient that will increase the pounds of live broilers the producer has to sell, and the quantity and quality of edible meat the processor, retailer and consumer ultimately receive, is of primary interest to the poultryman.

Some interest has been expressed in the possibility that cereal grains used in poultry rations have an influence on the per cent shrinkage and quality of poultry.

Maw (1935) reported that feeding various cereal grains had a definite influence upon the distribution of fat in the carcass and composition of tissues in roasting chickens. The meat from the birds fed corn was more moist, had the most desirable flavor and best texture; whereas, the birds fed wheat were drier and had poorer flavor and texture. Maw, et al (1936) fed cockerels fattening diets for 21 days, containing the single cereal grains: corn, wheat, oats, or barley, plus 6% animal protein. They observed the amount of fat found in the edible meat was 8.9, 6.9, 4.8 and 3.4% for the birds fed corn, wheat, oats and barley, respectively, indicating that corn was superior from the standpoint of producing fat.

Using the same cereal grains and similar experimental procedure, Holcomb and Maw (1934) studied the effects of the grains on distribution of fat in the carcasses of fattened roasting birds. They observed that ground yellow corn caused a higher percentage of total body fat to be deposited in the flesh and a lesser amount as subcutaneous and abdominal fat; whereas, oats, barley and wheat showed in varying degrees the reverse effect. North (1941) reported this to be true in turkeys. He observed that the corn diets had a tendency to deposit more fat in the flesh, while the wheat, oat, rye and barley diets caused more fat to be deposited internally.

Cruickshank (1937) observed that birds fed a ration consisting of milk and oats had a soft fat, while birds fed milk and barley had a very hard fat. Harshaw (1939) observed that birds fed corn had the highest percentage of fat in the edible portion, whereas birds fed oats had the least fat in the edible portion.

If, by feeding certain cereal grains, the area and quantity of fat deposition in broilers could be influenced, this would have an effect upon the per cent shrinkage and carcass quality.

Kansas Experiments

The Kansas station has been conducting a series of experiments in an effort to investigate the following: (1) to determine if the different cereals grains have any effect upon the per cent shrinkage; (2) compare carcass quality of the dressed birds fed diets containing the various cereal grains; (3) determine which grains give most efficient and economical gains; and (4) compare growth promoted by the various cereal grains fed.

In all experiments, 240 sexed chicks one day old were randomized into 12 lots of 10 male and 10 female chicks each. The chicks were brooded in electric battery brooders. Crossbred chicks (egg production strains of New Hampshire x Kansas State College Strain White Plymouth Rocks) were used in all the studies. Six diets were prepared and replicated for all the investigations. In all experiments, the individual cereal grains or combination of cereal grains constituted 60% of the diets. The protein content of the diets in all cases was adjusted to approximately 20%.

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U.S.I. FEED NEWS

Vol. III, No. 2 ★ A SERIES FOR SCIENTISTS AND EXECUTIVES OF THE FEED MANUFACTURING INDUSTRY ★ February, 1956

Procaine Penicillin Found to Promote Growth in Pigs Even When "Inactivated"

Significant growth increases have been recorded by pigs fed procaine penicillin that had been "inactivated" to the point where it did not respond to microbiological assay, according to a report by researchers abroad.

The procaine penicillin was made "inactive" by several means, among which were heating and the addition of mineral salts. The "inactivated" penicillin was then added to the pig starter at time of weaning. The average growth-rate increase was found to be almost as high as that obtained with procaine penicillin that had not been "inactivated."

Procaine penicillin products in various concentrations and also in combination with Vitamin B_{12} are available from U.S.I.

Cobalt Absorbed by Intestine of Chicks

Recent experiments at a midwestern agricultural experiment station, using radioactive cobalt (Co^{60}), indicate that cobalt is absorbed by chickens. This is added evidence that there may be some synthesis of Vitamin B_{12} in the digestive tract of monogastric animals such as chickens—using cobalt and methylating agents. Methionine, an excellent methylating agent, is a suitable raw material for this type of synthesis. It also helps overcome the toxic effect of large intakes of cobalt.

Previous thinking had always been that chicks did not synthesize Vitamin B_{12} in the intestine. It was thought to be made only by the fermentation action of microorganisms—in the paunch of ruminants, or in commercial fermentation operations.

Methionine Improves Fur Quality in Mink

Number of Kits Weaned Per Litter Far Greater Than National Average

Striking evidence of methionine's ability to improve the quality and production of fur bearing animals comes from a statement just released by a leading Northeast mink farm.

According to the farm's director, addition of methionine to the feed over the last few years has boosted the number of kits per female wintered to almost 40% over the national average. Also, depth and density of the underfur of adult animals was markedly improved by methionine supplemented rations.

When pelts were graded recently by a leading fur auction house, they were found to have exceptional fur quality. These furs consistently have sold at a premium price because of their unusually fine characteristics.

Above: Methionine-fed mink. Note alert and healthy condition of animal.

Above: Close-up of mink showing unusual depth and density of underfur.

Photos courtesy of Rockledge Farm

Good Results in Spite of Bad Weather

The ration used at the farm, which raises several thousand animals annually, contains one pound of methionine per ton of dry matter. The excellent results have been obtained in spite of adverse weather which included hurricanes, floods, and abnormal temperatures.

It has been shown previously that methionine is one of the essential sulfur amino acids necessary for skin and hair formation. In the last few years its metabolic activity in fur formation has been demonstrated through the use of radioactive tracer techniques. This work led to the use by the fur bearing industry of methionine as a feed supplement.

Methionine Plays Role in Adrenal Gland Function

Evidence that methionine has a beneficial effect on Vitamin C metabolism and the functioning of the adrenal glands has been reported in a recent study.

A research team found that methionine increased the Vitamin C content of the adrenal gland in experimental animals. A high level of Vitamin C in the adrenals is known to contribute to the better functioning of these glands. Vitamin C is necessary for the utilization of the adrenal cortex hormones, especially for the salt metabolism controlled by the hormones.

Of three sulfur-containing amino acids studied, only methionine had this effect.

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female chicks were removed in all of the experiments. At the termination of the experiments, the male chicks were processed, using methods for killing and dressing comparable to those used in a commercial dressing plant. After the birds were dressed, they were immediately immersed in crushed ice to facilitate rapid cooling of the carcass and to maintain a desirable external appearance. Live, dressed and eviscerated weights were recorded for all birds. Preceding evisceration, the birds were segregated according to lots and scored for fleshing and finish. A notation was made of any observed carcass deformities. After the birds were eviscerated, individual birds were scored according to the amount of fat which was present around the viscera and attached to the abdominal walls.

Experiment I — (Experiments II, III and IV, involving various combinations, are not discussed in detail.) The following cereal grains were substituted at the rate of 60% in diets 1 to 5: oats, corn, wheat, milo and barley, respectively. Diet 6 consisted of a 50-50 combination of the cereal grains corn and milo.

Per cent shrinkage (dressing and evisceration losses). Diet, average per cent shrinkage, and average fat score for each lot are presented in Table 1. The analysis of variance is given in Table 2.

Table 1—Experiment I, Diet, Average Per Cent Shrinkage and Average Fat Score for Eviscerated Birds at Eight Weeks and Four Days of Age.

Lot	Diet	Aver. % shrinkage	Aver. fat score*
1	Oats—60%** ...	29.02	0.50
2	Corn—60%	28.09	1.55
3	Wheat—60% ..	29.55	1.85
4	Milo—60%	28.96	1.60
5	Barley—60% ...	28.85	1.38
6	⅙ Corn + ⅙ milo (60%) ..	27.36	2.05

*The carcasses were scored for internal fat on the basis of 5 being superior and 0 inferior.

**Represents 100% of the cereal grain portion of the diet.

Table 2—Experiment I, Analysis of Variance of Per Cent Shrinkage of Birds Dressed and Eviscerated at Eight Weeks and Four Days.

Source of variation	Degrees of freedom	Sum of squares	Mean squares
Diets	5	59.85	11.97*
Within subclasses .	110	468.85	4.26
Total	115	528.70	16.23

*Significant—P<.05.

Quality of dressed birds. Diet, carcass score, number and classification of breast deformities are reported in Table 3.

Table 3—Experiment I, Diet, Carcass Score, Number and Classification of Breast Deformities of Eight-Week and Four-Day Old Dressed Birds.

Lot	Diet	Carcass score*	Deformed breasts Slightly	Deformed breasts Badly
1	Oats—60%	1.5	1	0
2	Corn—60%	3.5	3	0
3	Wheat—60% ...	3.0	1	0
4	Milo—60%	2.5	7	9
5	Barley—60% ...	3.0	1	3
6	⅙ Corn + ⅙ milo (60%) ..	2.5	5	7

*The carcasses were scored for fleshing and finish on the basis of 5 being superior and 0 inferior.

When carcasses of birds fed the various diets were compared from the standpoint of fleshing and finish, the chickens fed corn were superior with a score of 3.5. Very little difference was observed in the carcass quality of the birds in the lots fed milo, and corn plus milo; however, their quality was lower than that of chicks fed corn. Chicks fed either barley or wheat were similar in carcass quality, but had a lower quality than birds fed corn, milo or corn plus milo. Chicks fed oats had the lowest carcass quality among the six lots with a score of 1.5. This substantiates the observations reported by North (1941); however, his study was conducted with turkeys.

A study of Table 3 reveals that the lot which was fed milo had 16 breast deformities. The deformities classified as "badly" deformed were sharp and pointed at the anterior portion of the keel bone. The term "rocker" breast is sometimes used to describe this particular deformity.

Feed efficiency. Feed efficiencies were calculated on a chick-day basis as pounds of feed required per pound of gain. Weekly efficiencies for each lot and average figures are presented in Table 4.

The chicks in Lot 3 which were fed wheat were the most efficient in utilizing feed, with an average of 2.54. In contrast, the poorest feed conversion was 2.93 for Lot 1, which was fed oats.

Cost of production. The cost of production was calculated on the basis of the cost of feed required to produce a pound of gain. Cost of production figures are listed in Table 5.

The most economical gains were made by chicks fed barley. They produced a pound of gain with a feed cost of $0.084.

Growth at eight weeks. The diets, average weight of the birds for each lot, and mortality are presented in Table 6.

An analysis of variance showed a highly significant difference in the growth produced by the different diets. Birds fed corn were observed to be the heaviest with an average weight of 964.00 ± 71.37 grams at eight weeks. Similar results were reported by Gutteridge and O'Neil (1941) and Scott, et al (1947) who conducted research with roasting chickens and broilers, respectively. Birds fed barley resulted in the lightest average weight of 844 ± 47.63 grams.

Summary

A series of four experiments was conducted to determine the effects of the various cereal grains on carcass quality in poultry. Observations were made for the per cent shrinkage, external carcass quality, feed efficiency, cost of production and growth in broilers. The five cereal grains—

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Table 4—Experiment I, Feed Efficiency (Lbs. of Feed Per Lb. Gain)

Lot	Weeks 1	2	3	4	5	6	7	8	Average
1	2.02	1.95	2.41	2.73	3.87	3.19	3.73	3.50	2.93
2	2.35	2.27	2.84	2.39	2.96	2.86	2.76	3.35	2.62
3	2.40	1.56	2.18	2.34	3.32	2.32	2.80	3.34	2.54
4	2.59	1.95	2.30	2.52	2.74	2.70	2.78	3.33	2.61
5	2.90	2.47	2.87	2.54	3.24	3.15	2.06	3.01	2.91
6	2.68	2.08	2.31	2.30	3.51	2.55	2.92	2.97	2.67

oats, corn, wheat, milo and barley—were fed individually and in various combinations.

Per cent shrinkage. Significant differences were found among the percentages of shrinkage of the birds dressed at eight weeks and four days, which were fed the single grains. The birds fed corn had the lowest per cent shrinkage.

When oats were fed singly or combined equally with milo, corn, wheat or barley, no significant differences were found among the per cent shrinkages of birds eviscerated at 10 weeks. This was found also to be true for the birds fed corn combined equally with wheat or with milo and corn; corn combined with milo at 10 and 90 or 25 and 75% levels. The birds fed milo plus barley had the lowest per cent shrinkage.

No definite correlation was observed between the amount of fat deposited on the viscera and abdominal walls and the per cent shrinkage.

Carcass quality. When the birds were dressed at eight weeks and four days, the birds fed corn had superior carcass quality among the single grain lots. Among the lots dressed at 10 weeks, which received the combination of grains, the birds fed equal portions of corn plus wheat had superior carcass quality.

Feed efficiency. Birds fed wheat were observed to have the best feed efficiency among the single grain lots. Comparing the various combinations, it was found that birds receiving equal portions of wheat and milo were the most efficient utilizers of feed.

Cost of production. Chicks fed barley had the lowest feed cost per pound of gain of all the various diets investigated (single grain or combinations). On the other hand, among the lots fed the various combinations of grains, the birds fed milo plus barley combined equally had the lowest feed cost.

Growth at eight weeks. Birds fed corn were found to give highly significantly greater growth when compared to the growth of the other single grains. Birds fed 10% corn combined with 90% milo had the best growth of the various combinations studied.

Conclusions

Under the conditions of this investigation, the following conclusions may be drawn:

1. Corn was found to give a lower per cent shrinkage than the other grains fed singly.
2. An equal combination of milo and barley produced the lowest per cent shrinkage among birds fed various combinations of grains.
3. There appeared to be no definite correlation between the amount of fat deposited on the viscera and ab-

Table 5—Experiment I, Diet, Cost of Feed Per Pound, and Cost of Feed Per Pound of Gain for Eight-Week-Old Crossbred Chicks.

Lot	Diet	Cost feed per lb.	Cost of feed per lb. of gain
1	Oats—60%	$0.033	$0.093
2	Corn—60%	0.044	0.115
3	Wheat—60%	0.052	0.131
4	Milo—60%	0.042	0.110
5	Barley—60%	0.030	0.084
6	½ Corn + ½ milo (60%)	0.039	0.102

Table 6—Experiment I, Diet, Average Weight, and Mortality at Eight Weeks for Crossbred Chicks

Lot	Diet	Av. weight and variation (grams)	Mortality (%)
1	Oats—60%	862.32±70.14	2.5
2	Corn—60%	964.00±71.37	0.0
3	Wheat—60%	867.38±66.22	0.0
4	Milo—60%	873.45±63.58	0.0
5	Barley—60%	844.15±47.63	5.0
6	½ Corn + ½ milo (60%)	865.75±82.44	0.0

Table 7—Experiment I, Analysis of Variance of Growth at Eight Weeks, for Lots Receiving Various Cereal Grains

Source of variation	Degrees of freedom	Sum of squares	Mean square
Diets	5	363,736.01	*72,747.20
Sex	1	1,063,503.10	1,063,503.10
Diet-sex interaction.	5	64,483.44	12,896.68
Within subclasses	225	2,511,619.85	11,162.75
Total	236	4,003,342.40	1,160,309.73

*Significant—P<.01.

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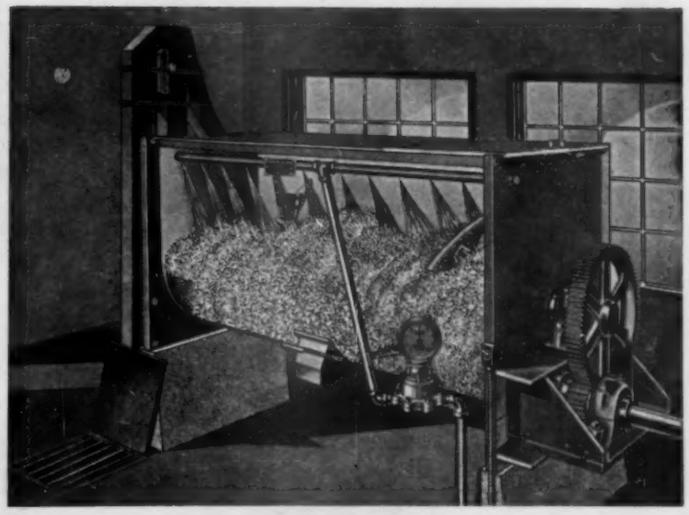

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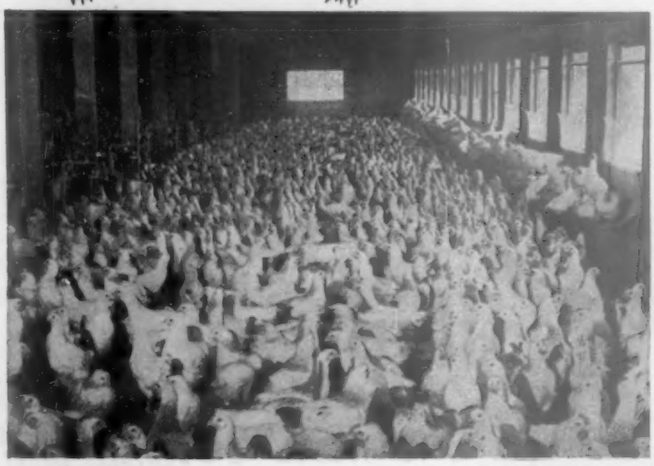

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dominal wall and the per cent shrinkage.

4. Birds fed corn had superior carcass quality for those dressed at eight weeks and four days.

5. An equal combination of corn and wheat was observed to produce superior carcass quality in birds dressed at 10 weeks.

6. Wheat was found to give superior feed efficiency.

7. The lowest feed cost per pound of gain was produced by chicks fed barley, based on costs at the time of the experiment.

8. Superior growth was obtained by feeding a combination of 10% corn and 90% milo.

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Pennsylvania Cattle Feeders Attend Meet

LANCASTER, PA. — Some 500 steer feeders from southeastern Pennsylvania attended an educational meeting at the Guernsey Breeder Sales Pavilion near here sponsored by four Farm Bureau Cooperatives.

Principal speaker at the Feb. 1 meeting was Dr. William Henning, Pennsylvania secretary of agriculture. Speaking of the over-all farm problem, Dr. Henning said, "I'm an optimist and I'm sure the farmer will come out all right in the long run."

Dr. Henning reported that a state survey showed 82,000 head of cattle and calves on feed for market in Pennsylvania on Jan. 1, a 2% decrease from a year earlier.

"I feel there is a good market for both feeder calves and fat cattle because Pennsylvania and nearby states, with their heavy populations, provide the greater consumer marketing area in the U.S.," he added. He said further that he believes "the time is ripe for Pennsylvania to increase its beef cattle production."

The program included a carcass grading demonstration by Melvin B. Kerby, Philadelphia, meat grading specialist for the U.S. Department of Agriculture.

W. C. Fish, agricultural representative of Eli Lilly & Co., Indianapolis pharmaceutical firm, reported on new developments in feeding stilbestrol to beef cattle.

L. C. Fogel, Palmyra, Pennsylvania Farm Bureau Feed division member, reported on research done by his organization in a beef feeding test, which included the use of stilbestrol in one group of animals.

Use of urea in cattle feeding was described by Jesse F. Smith of Ligonier, Pennsylvania Farm Bureau feed division fieldman.

Farmers from 10 southeastern Pennsylvania counties attended the meeting sponsored by the Lancaster County, Lebanon Valley, Chester-Delaware and Pennsylvania Farm Bureau Cooperative Assns.

A. F. Fish, Pennsylvania Farm Bureau nutritionist, presided at the meeting.

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Research in Turkey Nutrition

A Report from the University of California on Recent Experiments

By Dr. F. H. Kratzer

EDITOR'S NOTE: Reported in this article is some recent California work with turkeys on protein requirements, mineral excesses, unidentified factors and folic acid. The article is from a talk by Dr. F. H. Kratzer of the University of California at the California Animal Industry Conference.

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Under this broad title I wish to discuss some of the recent work with turkeys dealing with protein requirements, effects of mineral excesses, unidentified factors and the need for folic acid.

Protein requirement—The protein requirement for growth of turkeys at ages greater than seven weeks has been investigated by trials of three to four weeks' duration with birds of various ages. Four groups of birds were fed rations containing the various levels of protein and the protein requirement was estimated from the gains made by the various groups. The value obtained for a growth period was considered as representing the requirement at the beginning of the period since the need was presumably greatest when the birds were youngest. The rations were formulated to contain adequate lysine at the various protein levels.

The protein requirement decreased quite rapidly as the turkeys became older. The requirement at eight weeks of age was approximately 20% and dropped to 15% at 16 weeks of age. At 20 and 24 weeks of age the requirement was approximately 13 to 14%. The most of the rations contained 10 to 15% wheat by-products and from 14 to 40% barley. Presumably the energy level of the ration could influence the protein requirement as has been shown to be true for young poults and for chickens.

Rapeseed oil meal which is available in the northern states and in Canada has been considered frequently as a feedstuff for poultry. Work at other stations has indicated that rapeseed oil meal depresses growth when added to chick or poult rations. Rapeseed oil meal also contains a goitrogen and it has been supposed that the reduced growth results from the action of the goitrogen. The addition of protamone to a ration containing rapeseed oil meal, however, failed to improve growth, although it was effective in reducing the size of the thyroids. Purified rations which contained rapeseed oil meal as a source of protein gave adequate growth, indicating that the protein was adequate. Further work showed that, although adequate by itself, rapeseed oil meal protein does not contain an excess of lysine and that this amino acid becomes growth limiting when it is used in practical rations. It would thus appear that rapeseed oil meal should be a satisfactory protein supplement for growing turkeys if lysine is adequately provided for.

Mineral excesses—Slinger at Ontario Agricultural College has shown that 0.3% and 0.5% inorganic phos-

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phorus in a turkey ration caused an increase in perosis above that observed with 0.7% inorganic phosphorus in the ration. The question has arisen whether excesses of calcium and phosphorus can also cause an increase in perosis. It is known that in chicks excess calcium and phosphorus can decrease the availability and therefore increase the requirement for manganese.

A practical poult starter containing about 2.1% calcium and 1.0% phosphorus (0.63% inorganic) was used as a control and additions of 2, 4 and 6% bone meal were made to it. The birds were raised on wire for 12 weeks and then placed in growing yards. The additions of bone meal were continued with the growing mash and the birds were held to 28 weeks of age. Growth was not reduced by bone meal until the 6% level was reached and there was no difference in leg disorders in any of the groups. Additional manganese (20 gm. per 100 lb.) improved growth of the turkeys fed the 6% bone meal. The results indicate that excesses of calcium and phosphorus may not be as dangerous as previously supposed although the minor element content of ration could presumably influence the results obtained.

Unidentified factors — A considerable amount of work is being done at various laboratories throughout the country in establishing the presence of factors in addition to the known nutrients which are required for the growth of chickens and turkeys. We also have been studying the need for an unidentified factor(s), using dried whey as a source material. By the use of a purified ration containing isolated soybean protein we have repeatedly obtained responses of varying magnitude from whey preparations. Some variations have been noted in the activity of different samples of dried whey which we are not able to account for at present. Experiments with a practical type ration have shown little response to the whey samples used, although other stations have reported marked responses under similar conditions. It is probable that many of the discrepancies in unidentified factor work will not be resolved until pure preparations are obtained and investigated.

A hatchability experiment was conducted with turkey breeder hens in which two groups of approximately 35 birds each were fed a ration of practical feedstuffs including 7.5% alfalfa meal and 2.5% fish meal. Vitamins A, D, E, riboflavin, pantothenic acid and niacin were supplied additionally. Two groups were fed similar rations with the addition of 4% of dried whey at the expense of an equal amount of grains. Hatchability of fertile eggs was 64.3 and 64.6% for the basal groups and 70.2 and 71.7% for the whey supplemented groups. It appears that under these conditions a slight hatchability reponse was obtained from the added whey.

In other hatchability experiments a corn-soybean basal ration has given low hatchability (39 to 48%). Improvement has been noted with various natural supplements and combinations of them but good hatchability has not been attained by any of the groups. Vitamin E was included in the basal ration so it was probably not involved in the responses obtained. Work at Texas and Cornell has shown that vitamin E is required for hatchability in turkeys. The actual amount of vitamin E needed has not been established, but presumably the addition of vitamin E or an antioxidant might be important in maintaining late season hatchability during warm weather and when feed ingredients from the previous season are used.

Folic acid—A study to determine the need for folic acid for hatchability in turkeys utilized a basal ration containing fish meal, casein, wheat, corn, minerals, and vitamins. Hatchability began to decrease after the hens had been fed the basal ration for about 50 days and reached a minimum at approximately 80 days. Various levels of folic acid fed to other groups improved hatchability. The results of two years' experiments indicate that the requirement for optimum hatchability is approximately 0.7 milligram per kilogram of feed.

Eggs which failed to hatch were examined by Dr. Abbott of our department. There was little difference in the embryonic mortality during the first 14 days of incubation. Of the dead embryos in the late incubation period the folic acid deficient group showed about a three-fold increase in the common abnormalities. In addition there was a six-fold increase in the usual abnormalities. These included high incidences of micromelia, hemorrhage, enlarged gizzard and beak and leg abnormalities.

We have attempted to determine the function of folic acid in the turkey. Poults from deficient hens have been fed rations low in folic acid. Glycine (at 4%) depressed the growth of the folic-acid-deficient poults while an equivalent level of serine was not growth inhibitory. No growth depression was noted with either glycine or serine when the diet was supplemented with folic acid. This indicates that the conversion of glycine to serine may be blocked by a deficiency of folic acid.

The function of folic acid and vitamin B_{12} in the metabolism of serine and choline has also been studied by the use of glycine containing radioactive carbon. Folic acid is needed for the transfer of a carbon atom of glycine to one of the carbon positions in serine. Vitamin B_{12} is needed for the conversion of a carbon of glycine to a single carbon unit which may subsequently be used for formation of a methyl group of choline or transfer to one of the positions of serine. We hope that work of this type will clarify the interrelationships of the various nutrients needed for the prevention of perosis in poults.

The breeder hen requirement for folic acid of 0.7 mg. per kg. is slightly less than the poult requirement but is somewhat higher than the chicken breeder hen requirement. The usual practical rations containing alfalfa meal and soybean oil meal are probably well supplied with folic acid. If rations low in alfalfa and soybean oil meal were used, meeting the folic acid requirement might be a problem.

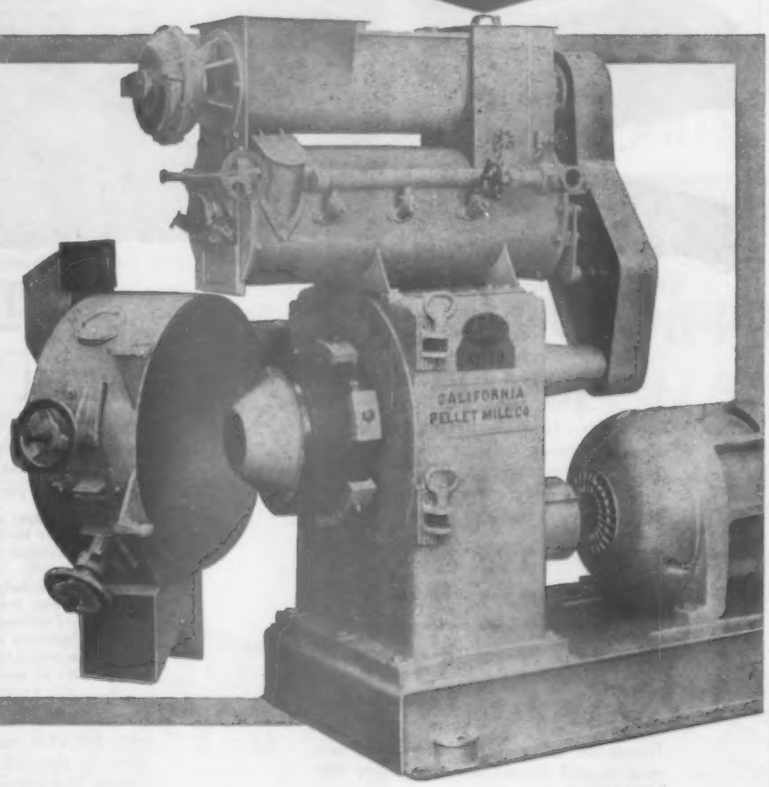
FOR PELLET PRODUCTION THAT

Matches its Name

CPM California Pellet Mill Co.

"HYFLO"

PELLET MILL



If you want a medium sized high output mill for low-cost-per-ton production, look into this California "Hyflo" Pellet Mill. Companion model to the famous CPM "Century" 75 and 100 HP machines, the "Hyflo" is specifically designed to handle a range of capacity in true proportion to the smaller power input of its 50 HP motor. There's no "blown-up" capacity here: wide faced die is matched to handle *more* top quality pellets per hour. See why the "Hyflo" outproduces any other mill of its size. Details are contained in CPM Bulletin No. 5544. Write for free copy today, or call your CPM representative.

"More California Pellet Mills are sold today than all other makes combined!"

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and here's why... "When you sell Dannen Feed, you know you can depend on its quality. It's tested and proved at the Dannen Research Farm and the new Dannen Mill is double insurance that it's manufactured exactly like it should be. Besides that, Dannen offers you complete feeding programs, strong resale help . . . in fact, everything a dealer needs to build a good feed business."

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Norton Coop Elevator Ass'n.
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"Dannen's Resale Plan is outstanding. There's no better way to get business and hold it than to rub shoulders with your customers and prospects on their own farms. And believe me, you can count on Dannen territory managers to see that you have plenty of opportunities to do just that."

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"Dannen is always doing something for us dealers. Right now the new Dannen television show sure is a big help in my territory. Their advertising program has always been the best, but now it's better than ever."

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Pinder Grain & Coal Company
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DANNEN MILLS, INC.
St. Joseph, Mo.

Grain Freight Rate Cut Asked in Canada

VANCOUVER—Kenneth Kiernan, British Columbia's minister of agriculture, appealed to the Canadian Board of Transport Commissioners at the hearings here last week for a reduction rather than an increase in freight rates on grain moving from the prairies to this province.

He declared the farmers are being badly hurt by the present rates and said the existence of many would be threatened by the proposed increase of 10¢ which was ordered last August but postponed pending a special hearing on the Coast.

Mr. Kiernan said the proposed grain rate increase would cut domestic consumption of grain at a time when there is a large prairie surplus on which the federal government is prepared to pay storage costs.

The commissioners were also advised that British Columbia poultry and dairy producers are being hard hit by U.S. imports of eggs, which, he said, is really an importation of U.S. grain fed to hens under a substantial U.S. government grain subsidy.

Join Chicago Feed Club

CHICAGO—Twenty-two new members joined the Chicago Feed Club recently.

New resident members include: J. Robert Chivers, Hales & Hunter Co.; William J. Judge, General Mills, Inc.; Michael J. McDonald, Albemarle Paper Manufacturing Co.; Charles J. Noland, Bemis Bro. Bag Co.; Wallace C. Olson, Pillsbury Mills, Inc.; Charles L. Brooks, Seavey & Florsheim Brokerage Co.; Paul F. Brown, Pillsbury Mills, Inc.; Frank Myers, St. Regis Paper Co.

Arnold L. Green, Percy Kent Bag Co.; D. A. Fitzgerald, Seedburo Equipment Co.; Lyle A. Wilkens, Central Bag & Burlap Co.; Frank B. Wales, Columbia Malting Co.; Oscar Mindrup, Dawes Laboratories, Inc.; Andrew S. Kaminski, Hamilton Rubber Mfg. Co.; Thomas J. Williams, Kraft Foods Co.; John P. Taylor, Kraft Foods Co.; Marvin J. Hanson, Morton Salt Co.; Paul W. Matson, Morton Salt Co.

New non-resident members include: Paul W. Franke, Franke Grain Co., Inc., Milwaukee; Guy E. Hiller, Penick & Ford, Ltd., Cedar Rapids, Iowa; Andrew Liethen, Liethen Corp., Appleton, Wis.; Virgil T. Harlach, Allied Chemical & Dye Corp., Earlville, Ill.

ADDITION PLANNED

REMSEN, IOWA — A 250,000-bu. elevator addition project has been approved by members of the Farmers Cooperative of Remsen, Iowa.

Iowa State Course for Assistant Managers Set

AMES, IOWA—A short course for assistant managers of elevators and farm supply businesses has been scheduled at Iowa State College for Feb. 27-March 2.

Sponsored by the college in cooperation with elevator and farm supply trade groups, the course is described as a concentrated in-service training program for assistant managers designed to supplement their on-the-job experience and to also help them to ultimately become better managers.

Among the subjects to be covered will be salesmanship and meeting the public; records and accounting; grain grading, marketing and warehousing; farm supply purchasing and inventory managements, and responsibilities of assistant managers.

Prof. R. M. Vifquain, director of short courses at the college, is in charge of registration.

Kasco Radio Shows

NEW YORK—Kasco Mills, Division of Corn Products Sales Co., will use network radio for the first time as the sponsor of three CBS Radio network programs, "Arthur Godfrey Time," Art Linkletter's "House Party" and the "Robert Q. Lewis Show."

Kasco Mills will promote its dog food on Thursday broadcasts of Art Linkletter's "House Party" on radio only; a segment of "Arthur Godfrey Time," Fridays on radio only, and two five-minute segments of the Saturday "Robert Q. Lewis Show" commencing March 17. Agency for Kasco Mills is Clark & Bobertz, Inc., Detroit.

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CORN DISTILLERS DRIED SOLUBLES WITH GRAINS
MIX
NADRISOL
CORN DISTILLERS DRIED SOLUBLES

Are you mixing well-balanced formula feeds?

The feeds that promote quicker growth and greater meat and egg yield are the feeds your dealers and their customers want to buy:

Produlac or Nadrisol — grain fermentation products — are standardized, both products having the same riboflavin content and choline content.

With either Produlac or Nadrisol you can mix highly nutritive formula feeds. These economy fortifiers are practically starch-free but are rich in proteins—vegetable fats—and essential Vitamin B-G Complex factors, as well as unidentified growth factors.

Mix either Produlac or Nadrisol in your formula feeds. It's a good way to gain and hold customer acceptance.

Sold only to manufacturers of formula feeds.

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JOBBERS • BROKERS • CARRIERS
CONTACT US WITH YOUR OFFERINGS ON ALL GRAINS AND GRAIN PRODUCTS FOR DELIVERY INTO THE SOUTHEAST — TRUCK OR RAIL
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Full Hydraulic Control

"NEW LEADER" BULKMASTER
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feed delivery at its best!

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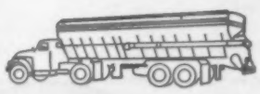
Self-Unloading Transports

HI-MOLASSES DAIRY FEED BODY

NEW HYDRAULIC CONTROLLED CONVEYOR— All controls conveniently located. Operates independently or simultaneously with auger. Full 36" width conveyor. Heavy duty rubber belt riveted to cross bars of all steel roller type drag chain gives smoother material flow without carry-back.

NEW HYDRAULIC CONTROLLED AUGER—Quick, positive action with speed control for faster, smoother bulk feed delivery—UP TO ONE TON PER MINUTE UNLOADING. Full hydraulic power to raise and lower final discharge auger reduces unnecessary weight, makes handling easier.

NEW DESIGN HOPPER—Improved "New Leader" design. Steeper sloping sides and wide conveyor give low center of gravity as well as faster unloading. All welded high tensile steel construction. Stronger, yet lighter—more payload every trip.

NEW REAR DOOR— Big rear door opens wide for dock loading of bagged feed and other items. Haul both bulk and bagged feed at the same time. Compartments for dividing load.

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Manufacturers of The World's Most Complete Line of Spreaders and Bulk Material Delivery Equipment

Twin City Nutrition Seminar Program

MINNEAPOLIS—A slight change has been made in the program for the Feb. 21 Twin City Nutrition Seminar to be held at 8 p.m. in Peters Hall on the St. Paul campus of the University of Minnesota.

The change involves the addition of an industry speaker to the program on "Feed Control-Feed Industry Relationships."

Speakers and their subjects are as follows: R. E. Bergman, Minnesota feed control official, from viewpoint of control official; N. E. Foster, Minneapolis district of the Food & Drug Administration, from FDA viewpoint, and George Patrias, director of research and nutrition, Hubbard Milling Co., Mankato, Minn., from viewpoint of the feed industry.

Earl H. Hanson, Archer-Daniels-Midland Co., is in charge of the program.

St. Louis Firm Robbed

ST. LOUIS — The Viteena Feed Mills, 3421 Chouteau Ave., St. Louis, was robbed of $400 recently by burglars who managed to force open a safe without setting off a gas bomb in one of its doors. Police said the steel layers of the left hand door were "peeled" and the hinges removed without disturbing the right hand door containing the bomb mechanism.

Nopco Names Buffalo Firm As Distributor

HARRISON, N.J. — Robert T. Whelan, eastern agricultural sales manager for the Nopco Chemical Co., has announced that the Sunset Feed & Grain Co., Buffalo, N.Y., will henceforth be distributor in New York state for Nopco feed supplement products.

Under the supervision of Robert Gray, head of its specialties division, Sunset will handle the sales of all Nopco vitamins, antibiotics and amino acids for poultry and animal feeds, including Micratized Vitamins A&D, Nopcosols and Nopco-Paks.

To assure adequate distribution facilities, Sunset will maintain warehouses in Buffalo and other key points in the state.

LA BUDDE
MILWAUKEE, WIS.
MALT SPROUTS
BREWERS GRAINS
DISTILLERS GRAINS
BEET PULP
AND 44 OTHER FEEDS

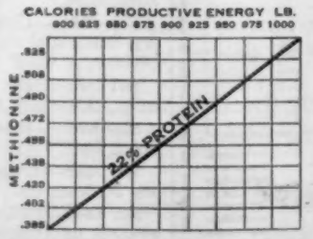
Formula change at hand?

RECHECK METHIONINE REQUIREMENTS

when you change ingredients or alter feed energy

Requirements for supplemental methionine change the minute you alter your feed formula. For example, any increase in the proportion of fat, corn or other high-energy, low-protein feedstuffs in your formula will alter the protein-calorie ratio.

In order to obtain maximum results, certain calorie-protein-amino acid relations must be maintained. The graph visually depicts this vital protein-calorie relationship.



Even if you interchange ingredients of equal energy value, you should review methionine requirements. Remember, calorie content is no measure of protein or amino acid. Replacing corn with wheat, for instance, will reduce natural methionine content by half, even though energy remains about the same. It is important to add additional Dow methionine to protect feed performance.

Dow methionine supplementation gives you greater formula flexibility, but it is wise to check requirements whenever you make a change. THE DOW CHEMICAL COMPANY, Agricultural Chemicals Sales Department, Midland, Michigan.

you can depend on DOW AGRICULTURAL CHEMICALS DOW

Worth Looking Into

New Products
New Services
New Literature

This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

No. 5394—Poultry Book

The 22nd edition of "Profitable Poultry Management" published by the Beacon Milling Co., Inc., has been printed. The publication is free within Beacon's distributing area—which is from the Virginias to Maine, excluding western Pennsylvania and western New York. Outside the area there is a charge of $2 per copy for the book. The 280-page book was prepared by C. E. Lee, O. A. Rowoth and R. E. Miller and contains sections on the poultry outlook, profits, breeds, range, rearing platforms, feeding, management, housing, diseases and much other information of interest to feed men and poultry producers. Money orders or checks for $2 may be made payable to the Beacon Milling Co., Inc., Cayuga, N.Y. Inside the company's distributing territory the publication is free.

No. 5397—Sifters

New literature on the Richmond line of sifters has been prepared by Sprout, Waldron & Co., Inc. Literature is available on the following trade-name products: The Gyro-Whip sifter which is capable of producing from two to 12 separations; the Super sifters which are ceiling suspended, capable of making up to eight separations and made in two, four or six sections; the Gyro-Lab sifters for research and light production work which make from two to five separations; and the Gyro-Pedestal sifters which have a single sieve, two separations and handle either batches or streams of free flowing materials containing small percentages of oversizes. The literature is available by checking No. 5397 on the coupon and mailing it to Feedstuffs.

No. 5395—Aluminum Conveyor

A new line of aluminum multipurpose conveyors called Ve-Be-Veyor has been announced by the Oliver Corp. The conveyors are equipped with ½ hp, 115 volt, single phase motors with reversing drum control and power drive, gear reduction unit. No pulley adjustments are

required at either end of the conveyor, the manufacturer says. A new "V-groove guide" principle is said to keep carrying belts centered at all times, eliminating the problem of belt run-off. Three sizes available are 12 ft., 16 ft. and 20 ft., weighing 149, 192 and 235 lb. respectively. Uses suggested by the manufacturer include floor-to-floor operations, as boosters for gravity lines, for loading and unloading vehicles, for moving and stacking packages in stores, factories, warehouses or on farms. For complete information, please check No. 5395 on the coupon and mail it to this publication.

No. 5396—Vibrating Screen

A new high-speed vibrating screen called by the trade name "HS Vibrex" for fine screening wet or dry materials has been developed by Hewitt-Robins, Inc. It has been especially designed for use with screen cloth of 10 to 80 openings per lineal inch, but under certain conditions is suitable for separations as high as 100 mesh. The manufacturer claims the screen is 30 to 80% faster than previous mechanical screens. It has a speed of 3,300 rpm when set for 1/32 in. stroke, and 2,400 rpm when operating on 1/16 in. stroke. An oil mist system is said to prevent overheating of bearings. The screen requires less headroom than previous models and handles most materials at an inclination of 10 to 15°, according to the maker. For more information, please check No. 5396 on the coupon and drop it in the mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 5345—Rotary Airlock feeder, Prater Pulverizer Co.

No. 5346 — Straddle carrier, Ross Carrier Division of Clark Equipment Co.

No. 5347 — Flock record chart, American Scientific Laboratories.

No. 5348 — List of special days—50¢ a copy, order from Domestic Distribution Dept., Chamber of Commerce of the U.S., 1615 H St., N.W., Washington 6, D.C.

No. 5349—Feeder for starting pigs, Farmer Feeder Co.

No. 5350—Hopper magnet, H. C. Davis Mill Machinery Co.

No. 5351 — Hog wormer, Pemco Products, Inc.

No. 5352 — Egg grader, National Poultry Equipment Co.

No. 5353—Fire alarm system, Seedburo Equipment Co.

No. 5354—Booklet on animal fat handling and mixing systems, Wenger Mixer Manufacturing Co.

No. 5355—Bulletin on "Biological Test Diets," General Biologicals, Inc.

No. 5356—Automatic oil brooder, Makomb Steel Products Division, Globe American Corp.

No. 5357—Hammer mill, Prater Pulverizer Co.

No. 5358—Liquid and dry feeders, Omega Machine Co., Division of B-I-F Industries, Inc.

No. 5359—Drag conveyor, Southern Equipment Co.

No. 5360 — Continuous feeding of dry materials, Omega Machine Co., Division of B-I-F Industries, Inc.

No. 5361—Bulk weighing scale bulletin, Richardson Scale Co.

No. 5362 — Hanging feeders, National Ideal Co.

No. 5363—Rumen stimulator, Cudahy Packing Co.

No. 5364—1956 calendar featuring weather information, John W. Eshelman & Sons.

No. 5365—Grain sampler, Ralph C. Gardner & Co.

No. 5366—Cattle and sheep wormer, Anchor Serum Co.

No. 5367—Dust filter unit, Day Co.

No. 5368 — High speed pulverizer bulletin, Pulva Corp.

No. 5369 — 150-bu.-per-hour liquid seed treater, Panogen, Inc.

No. 5370 — Poultry mash antioxidant, McKesson & Robbins, Inc.

No. 5371—Automatic open mouth bag filling machine, Kraft Bag Corp.

No. 5372 — 1,000-lb. capacity lifter, Colson Corp.

No. 5373 — 150-bu.-per-hour liquid seed treater, Panogen, Inc.

No. 5374 — Dust collectors, Omega Machine Co., Division of B-I-F Industries, Inc.

No. 5375 — Alfalfa bale shredder, Winsted Roto-Matic.

No. 5376 — Retractable curtain for plants and warehouses, Bemis Bro. Bag Co.

No. 5377—Bale fork for handling eight to 10 bales without stacking, Olson Manufacturing Co.

No. 5378 — Bulletin on vibrating feeder, Richardson Scale Co.

No. 5379—Farm income tax booklet, Nitrogen Division of Allied Chemical & Dye Corp.

No. 5380—Booklet on salesmen, Du Pont Co.

No. 5381—Pig feeder, H. D. Hudson Manufacturing Co.

No. 5382—Bag packer brochure, E. D. Coddington Manufacturing Co.

No. 5383—Hydraulic lift, 1,000-lb. capacity, Crown Controls Co., Inc.

No. 5384—Sales management brochure, Cappel, MacDonald & Co.

No. 5385—Hog waterer, H. D. Hudson Manufacturing Co.

No. 5386 — Dehydrated condensed fish solubles product, VyLactos Laboratories, Inc.

No. 5387 — Wall products, Bemis Bro. Bag Co.

No. 5388—Booklet on safety in the grain milling and storage trade, Accident Prevention Department of the Association of Casualty and Surety Companies.

No. 5389 — Cage laying operation booklet, Vineland Poultry Laboratories.

No. 6364 — Catalog on process plants, Chemical Plants Division of Blaw-Knox Co.

Wisconsin Researchers Report on Findings In Studies with Fat

MADISON, WIS. — Animals on high-fat diets make better use of protein in their feed and they need more water, according to C. A. Elvehjem, Manuel Schreiber, and Ruta Pokorinjs, University of Wisconsin nutrition research workers.

They say it isn't clear yet why high-fat diets have this protein-sparing action, but the reason for increased need of water seems fairly clear.

The protein-sparing action in effect increases actual protein intake of an animal. Scientists have known for a long time that increased protein intake calls for increased water. Also, for each calorie of energy supplied, fat yields less metabolic water than carbohydrates. Metabolic water is water that's tied up in chemical combinations in the food.

It looks as if the protein-sparing action of fat works well only up to a point, the researchers said. On a low protein ration, substitution of fat or carbohydrate increased energy intake and gave better growth and protein utilization. More than 5% fat in high protein rations decreased growth and efficiency of protein utilization. However, a level of 5% added fat is about as high as most feed manufacturers have been using in their mixed livestock and poultry feeds.

ADDS MIXING EQUIPMENT

LEWISVILLE, MINN.—The Lewisville Farmers Elevator has announced that it is now equipped to mix a vitamin "E" emulsion into custom ground feed. The elevator has installed an all steel bulk tank with a capacity of 30,000 lb. and other equipment to permit blending of the "E" emulsion into the feed under pressure.

Send me information on the items marked:

- ☐ No. 5394—Poultry Book
- ☐ No. 5395—Aluminum Conveyor
- ☐ No. 5396—Vibrating Screen
- ☐ No. 5397—Sifters

Others (list numbers) .....

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SLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

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MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

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Feedstuffs
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Reader Service Dept. Minneapolis 1, Minn.

John P. Jones

Victor Chemical Names Assistant to President

CHICAGO—John P. Jones has been appointed an assistant to the president of Victor Chemical Works, Rothe Weigel, president, has announced.

Mr. Jones, formerly vice president and general manager of Western Phosphates, Inc., Salt Lake City, Utah, will assume his new duties in Victor's Chicago headquarters. He will assist Mr. Weigel in development of a program for diversification of Victor's activities and the scouting of possible acquisitions.

James M. Gillet, also assistant to Mr. Weigel, will concentrate on industry relations, legal and tariff problems, contact with government agencies, and executive office liaison with the seven communities in which Victor has manufacturing plants.

Mr. Jones, a native of Cody, Wyo., was graduated in chemistry from Stanford University in 1931. He joined Stauffer Chemical Co., San Francisco, and rose through various Stauffer departments to become assistant to the general manager in 1945. In 1952, he was assigned by Stauffer to participate in the formation of Western Phosphates, Inc., by Stauffer, American Smelting & Refining Co. and Kennecott Copper Corp.

Grain Sorghum Used for Feed Up In First Quarter

WASHINGTON—Use of grain sorghum for feed in the first quarter of the 1955-56 season increased sharply from the same period a year earlier.

The February grain sorghum market summary issued by the U.S. Department of Agriculture shows that feed use during the October-December period totaled 36.6 million cwt., as against 22.3 million cwt. last season and 19.4 million cwt. the same period in 1953.

Total disappearance from Oct. 1 through Dec. 31 was 47.4 million cwt., USDA estimates. This disappearance was derived by subtracting Jan. 1 stocks from the sum of production and the Oct. 1 carry-over stocks. Since harvesting begins in August in some areas, part of the crop may have been used before Oct. 1. The disappearance October through December this season compares with 25.4 million cwt. last season and 27.4 million cwt. the 5-year (1949-53) average for those months.

Exports of grain sorghums increased sharply the first quarter of the season, reflecting in part the heavy exports from CCC stocks. Exports, October-December, totaled 9.4 million cwt. this season compared with 1.9 million last season and 0.8 million in 1953, USDA reports.

Stocks Increase

Stocks of grain sorghums in all positions Jan. 1 totaled 124.6 million cwt. (222.5 million bushels). This compares with 107.9 million cwt. (192.8 million bushels) a year ago and 44.4 million cwt. (79.2 million bushels) on Jan. 1, 1954.

Farm stocks totaled 38.1 million cwt. this January, as against 30.7 million a year ago. Only in 1951 were farm stocks larger than this year, USDA says.

Terminal stocks of 21.5 million cwt. were slightly below a year ago. Stocks at interior mills, elevators, and warehouses totaled 65 million cwt.—the largest of record. About 56% of the Jan. 1 stocks were owned by or under loan to Commodity Credit Corp.

Farmers placed 43.5 million cwt. of 1955-crop grain sorghums under price support through Dec. 15. This is only slightly more than a year ago and compares with 14.4 million cwt. of the 1953 crop by Dec. 15, 1953. The total placed under support from the 1954 crop was 64 million cwt., of which about 61 million were delivered to CCC.

Sales of CCC-owned grain sorghums from the middle of April to the end of January totaled nearly 53 million cwt., of which the bulk was for export. The CCC non-committed inventory on Jan. 28 totaled 8.3 million cwt., as against 6 million a year earlier.

Farm prices of grain sorghums averaged $1.70 cwt. October through January, which was about 50¢ below the same months of 1954-55. The support rate for the 1955 crop is $1.78 cwt. or 50¢ below the rate for the 1954 crop.

PURCHASE FEED FIRMS

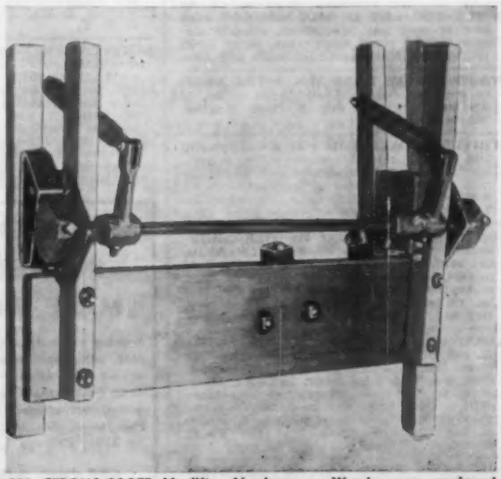
ALBIA, IOWA—Lloyd Morgan and William Henderson have purchased the DeVos Implement & Feed Co. stores here owned and operated for the past 19 years by Paul DeVos. Mr. DeVos will continue to operate a hardware and seed store in a building which formerly housed the J&J Hardware.

Advertisement

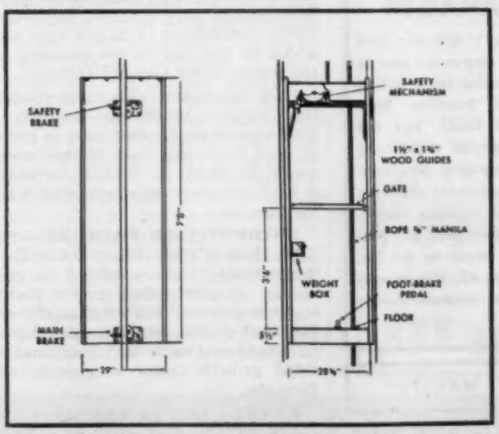
NEW PRODUCT NEWS

STRONG-SCOTT MANLIFTS GIVE LONGER, SAFER SERVICE!

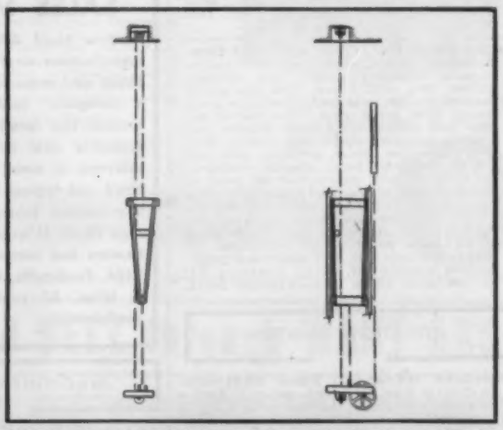
STRONG-SCOTT'S new Aluminum Manlift is sturdy, lightweight and safe. Due to the non-corrosive, weather-proof material, it can be used outside as well as inside. These advantages enable the STRONG-SCOTT Aluminum Manlift to give better, longer and safer service than any other Manlift on the market.



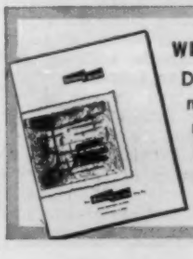
ALL STRONG-SCOTT Manlifts—Aluminum or Wooden—are equipped with large surface main brakes plus dual safety brakes. These dual safety brakes insure absolute safety should the cable ever break. This advantage alone makes the STRONG-SCOTT Manlift the safest Manlift buy on the market today.



These drawings illustrate the safety features exclusive on the STRONG-SCOTT Aluminum Manlift. Notice STRONG-SCOTT'S Aluminum Manlift has solid safety panels on BOTH sides. The Aluminum lift is also equipped with anti-skid flooring and special safety bars hinged across the opening.



STRONG-SCOTT'S E-Z Pull Attachment on either Aluminum or Wooden lifts (shown in the drawing) is designed to give easier operation with less effort on the part of the operator. The E-Z Pull Attachment is also available as a separate unit or can be installed on lifts already operating, with little expense.



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Detailed information on the equipment shown above will be sent on request. Simply drop a card or a letter to the Sales Department at the Strong-Scott Mfg. Co. 451 Taft Street, Minneapolis 13, Minnesota.

The Strong Scott Mfg. Co.

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Dept. FS-218

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WRITE US. WE HAVE WHAT YOU NEED in supplies for feed and flour mills. If it's new or used, buy it from Hughes, Wayland, Mich.

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KISCO 40 H.P. STEAM BOILER. 200 SQ. ft. heating surface. 1,380 lb. of steam per hour. Burns natural gas or No. 2 fuel oil. Condensate return system included. Maximum W. P. 125 lb. Completely automatic. Still in operation. Will be available latter part of March. Inquire Lindsey-Robinson & Co., Inc., Roanoke, Va., Mr. P. L. Baird, Jr.

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BULK FEED DELIVERY TRUCK, 3 COMpartment, 10-ton, GMC, cab over engine chassis, excellent shape, low mileage, $3,500. 1953 GMC Diesel with two utility trailers, 24-ton legal load, aluminum grain boxes, blow tarps, rain tarps, corner angles and cables, extra tires, wheels, etc. Unit in excellent shape, new rubber, $10,500. 1951 tow motor, 4,000-lb. fork lift, 12' lift, extended forks, guards, completely reconditioned, guaranteed as good as new machine, $2,500. 1948 Clark Carloader, 4,000 lb., 12' lift, completely overhauled, $2,000. Caulkins slurry treater, used one month, 40% discount. And many other items, some supplies. All equipment located in Chico, Cal. For additional information contact Mr. Clyde Dahlman, 128 W. 1st Ave., Chico, Cal.—Fireside 24684.

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SALESMAN WANTED — UNLIMITED OPportunity with national organization for man to sell specialty feed products including a dried rumen concentrate to distributors, dealers and feeders throughout the Middle West. Livestock and feed background required. Salary and expenses. Reply by letter giving full details. Address Box 349, South Side Station, Omaha, Neb.

PUBLIC RELATIONS WRITER — YOUNG college graduate in agriculture preferably poultry, some knowledge dairy industry, for growing publications agency to handle poultry and dairy feeds account beginning as trainee. Central New York State location. Send covering letter, salary requirements and resume to L. M. Harvey & Co., 753 James St., Syracuse 3, N. Y.

NUTRITIONIST — NATIONALLY KNOWN manufacturer of vitamin supplements has good opportunity for young man with B.S. or M.S. degree. Applicant should be able to formulate feeds for all classes of livestock and poultry and also be capable of writing semi-technical articles. Reply should include complete details on background and experience. Ad No. 1440, Feedstuffs, 551 Fifth Ave., New York 17, N. Y.

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Leasing our fresh egg merchandiser through feed mills, hatcheries and large egg producers. If you are now calling on these firms you're the man we want. Very liberal commission offered. Leads furnished. Write Phil Tobias, Sr., Tobias Enterprises, 187 N. La Salle, Chicago 1, Ill.

SEE OUR AD ON PAGE 78

SALES MANAGER

Medium sized AAA 1 midwest feed manufacturer wants aggressive man to direct and manage sales force selling a complete dealer franchise built around top quality feeds. You are probably now employed supervising salesmen in some capacity, you have hired and trained salesmen, you have a successful tonnage building record. Age 30-45. If qualified, send full particulars and recent photo to Ad No. 1444, Feedstuffs, Box 67, Minneapolis 1, Minn. All replies treated strictly confidential.

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REVERSIBLE DRIVE FOR 20" ATTRItion mill, also feeder-scalper for same. Joosse Bros., Fredonia, Wis.

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BABY CHICKS—AS HATCHED OR SEXED —Five popular breeds and one hybrid. Quality - Quantity - Service. Wholesale prices. Milford Hatchery, Liberty Road, Randallstown, Md.

Use Feedstuffs WANT ADS for RESULTS

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FOR SALE—FEED MILL AND FARM SUPply in central Ohio. Distributor for two good brands of feed. R.R. siding and truck loading. Owner wishes to sell warehouse and operate business. Address Ad No. 1482, Feedstuffs, Box 67, Minneapolis 1, Minn.

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OHIO-INDIANA-
ILLINOIS
MID-WEST BUSINESS EXCHANGE
Halbert C. Smith Plymouth, Ind.

SOUTHERN MEETING

(Continued from page 6)

manure did not compare favorably with fish meal.

It was of interest to the writer to find that 5% dried poultry manure could be included in an all-vegetable protein broiler diet with satisfactory results. It was apparent from Dr. Fuller's presentation that there was an interaction between the whey factor, the fish factor and methionine. Best results were obtained only when 0.05% methionine (1 lb. per ton) was added to the diet in the presence of the whey factor and fish factor.

It is concluded from these studies that poultry by-product meal is a good substitute for fish meal in broiler feed formulas, that feather meal could be used in broiler formulas when properly supplemented with methionine.

UNIDENTIFIED FACTORS — Dr. J. H. Hare of Chas. Pfizer & Co., Inc., Terre Haute, Ind., evaluated the economics of unidentified growth factor supplementation and emphasized the fact that poultry feed formulas should be rebalanced after including unidentified growth factor sources in the formula.

ENERGY IN BROILER RATIONS —"The Study of Energy in a Practical Broiler Ration" was the subject of paper prepared by C. E. Richardson and A. B. Watts, poultry department, Louisiana State University, Baton Rouge, La. These workers increased the energy level of the broiler feed through the addition of cottonseed oil to the formula. Data were presented which showed that the calorie-protein ratio of a broiler feed formula should be within the limits of 41.5 to 42.5. This is in agreement with the report of Dr. G. F. Combs of the University of Maryland, College Park, Md., and has also been confirmed by the poultry department of Texas A&M College, College Station, Texas.

In the presentation of his paper, Dr. Richardson stated that fibrous feeds had a depressing effect on the average gain of the birds and also on feed efficiency. Data were presented which showed that added fat could be utilized by the chick up to 12% of the total diet; however, from the data presented it was apparent that it was not wise to use more than 6% fat as cottonseed oil in a broiler ration for best economic returns.

The latter is of interest to the writer in that data obtained by A. A. Camp, superintendent, Substation No. 21, Texas Agricultural Experiment Station, Gonzales, Texas, in studies completed about Jan. 23, 1956, showed that even with a calorie-protein ratio of 42 to 1, no more than 5% fat as cottonseed oil should be added to broiler feeds and these data are also in agreement with private communications from Dr. G. F. Combs to the writer.

During the course of this presentation, Dr. Henry Fuller of the University of Georgia stated that 3% fat added produced just as good results as 6% in broiler feeds. This should be of particular interest to the feed manufacturer to the effect that it appears that the level of fat to be used in broiler feeds should vary somewhere between 2½ and 5% and that the manufacturer cannot expect to obtain increased returns which will justify the use of more than approximately 5% fat in a broiler feed.

Dr. Richardson stated during the course of presenting his paper from Louisiana State that the addition of fat to the feed improved the texture of the diet, eliminated the dust, decreased feed wastage and apparently improved the palatability of the feed.

ANTIBIOTICS FOR LAYING HENS — The writer presented two papers before this meeting. The first of these was entitled "Antibiotics for Laying Hens." The poultry department of Texas A&M College was among the first to show that antibiotics increased the egg production and improved the hatchability of eggs when the drugs were included in the laying diet.

The first report was made in late 1950. Penicillin was the antibiotic used in the first tests. Since that time, it has been shown in studies at Texas A&M that Aureomycin, Terramycin, bacitracin and penicillin will increase egg production when added to the laying diet and when the hens are surrounded by a contaminated environment such as would prevail on the average poultry farm.

It has been conclusively shown in studies carried out at Texas A&M that high level antibiotic feeding is particularly effective (levels used have ranged from 50 to 200 grams per ton) in bringing layers out of slumps in production as well as avoiding the occurrence of such egg production slumps.

It appeared to the writer that the most effective methods of using antibiotics in laying feeds may be that of increasing the present nutritional level up to approximately 25 grams per ton. In reviewing all experiments and reports wherein high level feeding has been used for laying hens, there have not been any instances where the level of 25 grams per ton has been utilized. There has been a general tendency to increase the level from the nutritional level (10 grams per ton) to a level of 50, 100, 200 or 400 grams of antibiotics per ton of laying mash. It is already apparent that 25 grams per ton of antibiotics fed continuously will cost only one half as much as the 50-gram level of the antibiotic of choice. Such a level (25 grams per ton) would not in any way detract from the use of 50 grams, 100 grams or 200 grams per ton when such levels were needed.

It is simply believed that a level of 25 grams per ton fed continuously might eliminate the therapeutic treatments which are also reported to have prevented slumps in egg production which very often occur on farms

where the high disease level which warrants the use of the 100- or 200-gram antibiotic level may be prevented.

TURKEY STARTER DIETS—The second paper presented by the writer was entitled "The Present Status of Energy-Protein-Methionine in Turkey Starter Diets," by T. M. Freguson, B. L. Reid and J. R. Couch, poultry department, Texas A&M College. It was pointed out during this presentation that the research workers wished to acknowledge the assistance of Dr. L. D. Matterson, poultry department, University of Connecticut, Storrs, Conn., in planning and carrying out studies conducted during the late spring and summer of 1955.

The level of protein used in these studies ranged from 21 to 29%. In one test all levels of protein were supplemented with methionine, tryptophane and lysine, singly and in various combinations.

From the results of these studies, it was apparent that the first limiting amino acid in a turkey starter diet was methionine. This was true irrespective of the protein level (21, 24 or 28%). Approximately 6,000 turkeys were used in all of these tests. The duration of the experiments ranged from 8 to 12 weeks.

It was apparent from these studies that 29% protein was not a high enough protein level if the energy content of the turkey starter formula was more than 900 calories per pound. It was apparent that a calorie-protein ratio of approximately 30 to 1 was in the range of the proper ratio for turkey starter formulas.

The average weights of the turkey could be improved by adding 0.05% methionine (1 lb. per ton) and in some instances as much as 0.1% methionine (2 lb. per ton) to diets containing more than 900 calories per pound. It was quite apparent from all the experiments reported that methionine was the first limiting amino acid and that the methionine requirement of the turkey increased as the energy content of the diet was increased.

It was of particular interest to the writer to note that the average weights of the turkeys could be decreased approximately 1 lb. by adding fat to the turkey diet so as to increase the calorie content of the feed to more than 900 calories per pound even though the protein content of such feed was 29% and the formula contained 10% fish meal.

It was also quite apparent from these studies that a turkey starter should have a minimum of 28% protein if the feed manufacturer wishes to obtain maximum results with regard to growth and feed efficiency. In all instances, 26 or 27% protein was too low for optimum results.

FEED EFFICIENCY IN EGG PRODUCTION—Dr. J. H. Quisenberry, poultry department, Texas A&M College, College Station, Texas, reported on the factors affecting feed efficiency for egg production. Dr. Quisenberry separated his paper into three main subheadings—(1) characteristics of the bird—breeding, (2) characteristics of the diet, and (3) management factors as related to feed efficiency.

Dr. Quisenberry stated that the characteristics of the bird which affected feed efficiency were body weight, egg weight, rate of production and the inherent rate of feed conversion. Work is currently in progress in the Texas Agricultural Experiment Station poultry department to determine whether or not different egg production stock can be bred for more efficient feed utilization for egg production. Three hundred twenty eight birds of three different lines of breeding are currently being fed. Results to date indicate that the breeders may have to include selection for feed efficiency in their breeding programs.

The characteristics of the diet which affected feed efficiency were energy and protein level, the vitamin and mineral levels, palatability, the fat level and the form of the feed with regard to whether the feed was given to the birds in the form of pellets, crumbles, mash, or mash and grain.

The management factors which were related to feed efficiency were types of housing, types of feeders and waterers to have for the birds and the protection against predatory animals.

BROILER STUDIES — The final paper presented at this meeting, which was thought to be of interest to Feedstuffs readers, was entitled "Broiler Studies Under Commercial Conditions," by B. H. Davis, Louisiana State University, Baton Rouge, La. Dr. Davis stated that the objective of his investigation was to obtain information on the cost of production for males and females separately and to determine at what age the males and females should be marketed if maintained separately. From the results presented in this paper, it was apparent that the males could be produced for approximately 2.7¢ less per pound than the females. Five thousand five hundred males and 5,500 females were used in the study.

Dr. Davis presented additional data which showed that the infermittent feeding of 100 grams per ton of Aureomycin fed during the first, fourth and eighth week decreased the cost of production approximately 1% per pound even when the cost of the Aureomycin was included in the cost of production. The intermittent feeding of this level of the antibiotic improved feed efficiency from 36.16 lb. of broiler per 100 lb. of feed to 39.6 lb. of broiler per 100 lb. of feed.

It might be stated further that it is believed by the writer that the present nutritional level of this antibiotic (10 grams per ton) is simply not enough for the most efficient production of broilers with regard to growth and feed efficiency. Would it not be better to increase the level of the antibiotic to 25 grams per ton and feed such a level continuously than to have the added cost of changing the feed at definite intervals such as was practiced in the intermittent feeding program (100 grams of Aureomycin per ton) during the first, fourth and eighth week?

The 1957 meeting of the Association of Southern Agricultural Workers will be held on Feb. 4-6 in Birmingham, Ala. It is hoped that there will be many representatives of the feed industry in attendance at this meeting.

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Used burlap, cotton feed and flour bags. Are paying: good mill run burlap bags @ 7½c, good mill run cotton bags @ 10c, torn bags 3c per pound. Any quantity. We also sell processed bags of all types, new and used.

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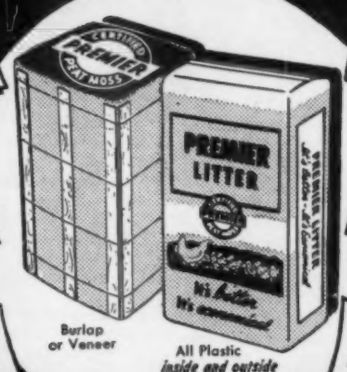
absorbs as much as 4 times more than other material



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NOW . . . Improved feeds and high capacity milling Using

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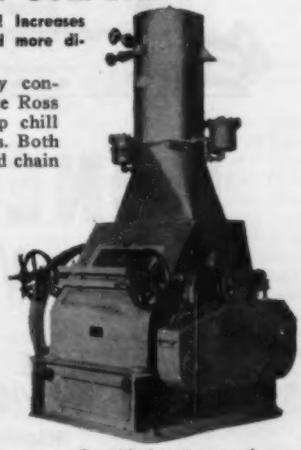
Handles all grains—up to 8 tons an hour! Increases bulk by enlarging each grain, making feed more digestible and nutritious.



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Available with or without Super Jet Steamer. In sizes 15" and 18" diameter from 24 to 36" long, and the 12x15 Special.

Mills may be furnished with Ross Pneumatic Air Conveying System at low cost. Eliminates bucket-type elevator plus cooling and conditioning of grain. Elevates product with 100% efficiency, no loss of finished grains. Dust free. No contamination. Sizes from 7½ to 100 H.P. Completely automatic operation.

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NOW! EXTRA LONG BALER HOLLAND MADE TWINE

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with *NEW* MANUFACTURING FACILITIES!

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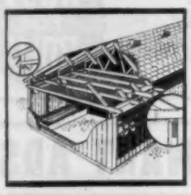
HONEGGER LEGHORNS

On-the-farm records on 41,766 Honegger Leghorns during the eight-year period, 1947-54, show an average yearly income of $4.23 a hen above feed and chick costs. These farm management records were supervised by the University of Illinois.



HONEGGER FARM BUILDINGS

Poultry houses, hog houses, machine sheds, utility buildings and milk houses . . . a complete line of farm buildings designed for maximum efficiency and economy.

HONEGGERS' BIG "H" FEEDS

Honeggers' Big "H" Feeds are designed and tested at Honeggers' 600 Acre Research Farm and backed by more than a quarter century of successful formulation and manufacturing of top quality foods.

THE SAME FAST, friendly, economical, neighborly service that has grown up with Honeggers is now available from a conveniently located, modern mill at Indianola. You see, Honeggers really started in the feed business with a small "tractor powered" hammer mill right on their own farm at Forrest, Illinois. The first feed was sold to friends and neighbors who stopped in to try the "new feed that brought such outstanding results."

Honeggers have never outgrown that friendly neighborly way of doing business. With four mills and hundreds of dealers throughout the Midwest, farmers know that new profitmaking feeds and more efficient methods are always coming from Honeggers.

A 600 Acre Research Farm at Forrest, Illinois, is constantly designing and testing new rations. Consistently first with new developments, Honeggers pioneered with such basic developments as SUGAR COATED PIG STARTER, RUMEN BEEF AND DAIRY FEEDS, HI-ENERGY POULTRY RATIONS, THERAPEUTIC FEEDS FOR PIGS and CHICKENS and others. DOUBLE your TONNAGE and TRIPLE your PROFITS with Honeggers complete THREE POINT program.

Shown at left are some of the Honegger facilities which help build better rations, upper left is the push-button Feed Mill which has been called America's most inspected feed mill, upper right is some of the poultry research houses where the foundation stock of Honegger Leghorns are housed, lower left is an aerial view of Honeggers' 600 Acre Research Farm at Forrest, Illinois, showing the Honegger Brooder Hatchery which is one of the nations largest quality hatcheries supplying a nation-wide network of associate hatcheries with the nationally famous Honegger Leghorn, lower right shows part of the broiler facilities on the Research Farm.

EXCLUSIVE DEALER FRANCHISES AVAILABLE IN SELECT AREAS

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CALCIUM CARBONATE | A 17½@21½¢, 3,000 A 19½@21¢; 600 ICU.

LIVESTOCK INVENTORY

(Continued from page 1)

Hatcheries decreased chick production 2%.

Indications are, USDA said, that livestock and poultry production will continue at a high level in 1956. Intentions for spring farrowing are down 2%, but there were 9% more hogs on farms Jan. 1. Another large calf crop is indicated, and a record large number of beef cattle on farms indicates beef production will be high. Increases also are foreseen in the various poultry operations.

Although the aggregate Jan. 1 number of livestock and poultry on farms was slightly larger, the farm value of $10.8 billion was down 4%. Most of the decline in values was due to a sharp drop in hog prices.

Details on livestock and poultry numbers by states and regions will appear in a subsequent issue of Feedstuffs. Meanwhile, following is a summary of the Jan. 1 inventory position.

CATTLE: The number of cattle and calves on farms and ranches Jan. 1 was 97,465,000 head—a new high. This number included 5.8 million head on feed for market. The cattle total was about 1% above the previous record a year earlier. Cattle numbers have increased each year since 1949, but the percentage rate of increase during 1955 was less than for any of the seven years.

The increase in total cattle numbers was primarily due to increases in beef calves and steers one year old and older. Beef cows and heifers two years old and older reached a new record high after registering a slight increase during 1955.

Milk cows and heifers two years old or older at 23,318,000 head were down 1% from Jan. 1, 1955. Heifers one to two years old kept for milk decreased 5% and heifer calves for milk decreased 1%.

The total inventory value of all cattle and calves on farms and ranches at $8.6 billion was slightly above a year earlier. The average value per head of cattle and calves was $88, compared with $88.20 a year earlier.

Value per head of milk cows on farms Jan. 1, 1956, averaged $139. This compares with $134 a year earlier.

HOGS: Hog numbers on farms Jan. 1, 1956, are estimated at 55,088,000 head, 9% more than a year earlier. Numbers were higher than a year earlier in all regions, with a 20% increase in the south central states and a 7 to 10% increase in all other regions.

Hogs under 6 months of age on farms Jan. 1, 1956, numbered 33,520,000 head, or 12% above a year earlier. These hogs were largely from the 1955 fall pig crop which was 12% larger than in the fall of 1954. Sows and gilts on farms are estimated at 8,900,000 which is 2% less than a year ago. Market hogs over 6 months old (excluding sows) on Jan. 1 at 12,668,000 head were 10% more than a year earlier.

SHEEP: Stock sheep on farms and ranches Jan. 1, 1956, are estimated at 27,009,000 head, only slightly less than a year earlier. All sheep and lambs, including those on feed, totaled 31,109,000 head on Jan. 1, 1956—a decline of 1% from a year earlier. Stock sheep numbers on Jan. 1, 1956, were about 45% below the all-time record set Jan. 1, 1942.

The number of ewes one year old and older was only slightly higher than a year earlier despite the larger number of ewe lambs held over at the beginning of 1955. All other classes of sheep showed declines from a year ago.

HORSES AND MULES: The number of horses and mules on farms continued to decline during 1955. The Jan. 1, 1956, inventory is estimated at 3,962,000 head. This is 8% below the 4,309,000 on hand Jan. 1, 1955, and less than half of the 1945-54 average of 8,212,000.

CHICKENS: Chickens on farms Jan. 1, 1956 (excluding commercial broilers) totaled about 382 million—2% less than a year earlier and 15% below the 1945-54 average.

Pullets on Jan. 1, 1956, numbered about 238 million—7% less than a year earlier while farmers increased their hens by 9% to 122 million. Farm flocks on Jan. 1 consisted of 62% pullets, 32% hens, and 6% other chickens, compared with 66, 28 and 6%, respectively, on Jan. 1, 1955.

TURKEYS: Farm holdings of turkeys (excluding turkey fryers) on Jan. 1 totaled about 4.9 million—1% less than a year earlier. Of these, 4.1 million were heavy breeds—1% more than a year earlier. Light breeder hens numbered 493,000—8% less than a year ago while the heavy breed hens at 2.7 million were up 10%. Holdings of market birds on Jan. 1 were down about 15% from a year earlier. Light breeds represented 17% of the market birds, compared with 15% on Jan. 1 last year.

HOG MARKET

(Continued from page 1)

intentions for a decrease in farrowing in the spring of 1956. Officials had hoped that the cutback in the spring pig crop would be larger than has been indicated.

Consumer Demand

The indication of consumer demand for pork is based on the percentage of consumers' disposable income which has been spent for pork products. In 1946, USDA tables show, consumers spent 3% of their disposable income for pork products. This percentage has been slowly declining and reached a 10-year low in 1955, when expenditures for pork were estimated at 1.9% of disposable income.

This statistic played no small part in a sharp revision of policy in the present administration of USDA, where it had been hoped that had consumer disbursements held up under the attraction of lower pork prices, the heavy hog production could have been justified and more grain could be estimated as potentially moving into swine.

The failure of the consuming public to increase its spending of disposable income for pork products at attractive price levels came as a great surprise to top USDA officials. This has required a drastic revision of their ideas on the theory that feed grains can be stored in animals and marketed on the hoof.

Spending for Beef

While the percentage of disposable consumer income for pork products has slumped, the percentage of the consumer income for beef has remained fairly constant, varying only a fraction of a full percentage point in the period named above.

This indicates to USDA officials that in regard to beef products, the consumer will maintain expenditures at about a fixed level no matter what beef prices may be; but in regard to pork, there seems to be a cut-off point at which the housewife appears to be shifting her disbursements.

At economic quarters in the USDA livestock branch, there is no fixed opinion regarding these comparative figures. Officials cite long range charts to show that there still does not appear any indicated trend.

Nevertheless, these same officials are fearful of the hog marketing situation for the coming year. They expect an improvement in hog prices by mid-summer but another drop as the spring pig crop moves to market. They speak hopefully that this drop will not be as drastic as that which happened in 1955.

While the impact of this unfavorable news first hits the packing industry, it also calls for some close examination by feed manufacturers, particularly in view of the present attention of USDA to increasing corn prices in the country.

Continued cheap corn at country points might maintain a high level of hog production. On the other hand, higher corn prices may discourage fringe operations in swine. It is believed that the efficient hog farmers working over long cycles are better customers for the feed industry than the in-and-out hog farmer who is attracted by the paper incentive of a very favorable hog-corn ratio.

On the other hand, the livestock report and the USDA estimate of the percentage of disposable consumer income now going into the pork product market may indicate that hog production is peaking and that the consumer, regardless of price levels, is showing a preference for other meats such as poultry.

Marketing Changes

Another not too clearly seen influence is the changing tempo and methods of supermarket sales of pork and beef.

It has been reported that some of the big packing companies which have spent millions of dollars in advertising brand names for hams and other pork products are now finding that the supermarket display methods, with fabricated cuts of hams and pork products, have in many instances eliminated all point-of-display contact between the packer of hams and the consumer who has been reached heretofore by national magazine advertising.

How much this change has influenced the drop in the amount of the consumer disposable income for pork products cannot be estimated at this time. The drop is too new to have developed any consequential examination. But there it is.

All of this should provoke some examination by the feed industry into the immediate future outlook for feed sales in the swine field.

INTENDED PURCHASES OF BABY CHICKS IN 1956

Geographic division	Intended purchases as a % of 1955 purchases	Per cent of total: Baby chicks bought in 1955 Straight run	Pullet chicks	Cockerel chicks	Baby chicks intended in 1956 Straight run	Pullet chicks	Cockerel chicks
New England	99	8	33	9	9	83	8
Middle Atlantic	101	43	51	6	43	52	5
E. N. Central	100	37	56	7	36	58	6
W. N. Central	103	45	46	9	44	48	8
South Atlantic	108	67	30	2	67	30	3
E. S. Central	112	53	41	6	50	46	4
W. S. Central	111	87	10	3	85	12	3
Mountain	99	59	35	6	59	37	4
Pacific	99	27	69	4	27	69	4
United States	103	52	42	6	52	43	5

PRICE BOOST

(Continued from page 1)

vance prices to the profit point or curtail output if the product does not move at the higher level.

Use of dicalcium phosphate in the feed industry took a big upswing last year. Department of Commerce figures show gains of 50% in total output, most of which has gone to the feed industry since food and medicinal uses have changed little, if any, and represent only a small, but profitable, part of the total production.

On the basis of government figures for the first 11 months of the year, 168,800 tons of dicalcium phosphate on a 22.4% phosphorus level were produced. This would be equivalent of 204,000 tons of an 18½% phosphorus product. There is no accurate way of knowing exactly how much of this total has gone to the feed industry, but trade sources estimate that the figure may be around 180,000 tons of 18½% phosphorus equivalent.

Unless there is a general price advance, it is doubtful if as much dicalcium will be produced in 1956. For several weeks producers have refused to take on any additional customers and several have shrunk their sales areas to points close to their producing plants.

This week Monsanto Chemical Co., St. Louis, announced an advance in price on 18½% phosphorus grade of dicalcium from $74 to $83.25 ton, and the 21% potency was increased from $84 to $94.50. The increase represents an advance of 50¢ per unit of phosphorus from $4 to $4.50.

Victor Chemical Works, Chicago, also announced the increase this week, and the American Agricultural Chemical Co., New York, raised its prices.

Officials of International Minerals & Chemical Corp. and the Shea Chemical Co. made no immediate announcement or no immediate comment on the price situation.

Officials of Texas City (Texas) Chemical Co. said they have made no price advance as yet. The Texas City plant is not now operating, but officials said that shipments are being made to customers from warehouse stocks produced last fall. Production is expected to be resumed at Texas City late this month, a company spokesman said, and the price situation will be considered at that time.

Monsanto officials said the advance was made because the company was losing money on dicalcium sales to the feed industry. Prices on all other phosphate products were increased several months ago as a result of higher production costs, a Monsanto spokesman said, but feed grade dicalcium was not advanced at that time because of the weak market position prevailing for that product. In the present advance, feed grade dicalcium is only catching up with other phosphorus products, this official said.

Feed industry use of dicalcium phosphate has increased steadily since this product first was used in quantity after World War II. By 1949 consumption in the feed industry had risen to about 45,000 tons. At that time the principal feed supplier, Tennessee Valley Authority, ceased production of the product. Several private firms then built plants to produce dicalcium and a sharp increase in output took place in a comparatively short period of time. The result was pressure on the market. There have been no new facilities built since 1953, however, and in the interval some firms have devoted more of their plant facilities for the production of sodium phosphates used in the expanding detergent market.

Pfizer Scientist Reports On Growth Factors

NEW YORK—A recent research report by scientists of Chas. Pfizer & Co., Inc., said that "a fermentation product—Vigofac—provides poultry feed with more concentrated and less expensive unidentified growth factors than natural sources."

The report was authored by J. H. Hare, W. M. Reynolds, W. K. Warden and H. G. Luther and was presented by Mr. Hare at the recent meeting in Atlanta of the Association of Southern Agricultural Workers.

Mr. Hare, member of the research staff of the Pfizer agricultural research and development center at Terre Haute, Ind., said the fermentation product, used at 0.15% of the ration, has been shown in research to be equal in growth-promoting action to several times this quantity of natural sources of growth factors. He said a ration containing adequate unidentified factors supplied by Vigofac can be rebalanced with other ingredients so that it is nutritionally equivalent to the known factors as well as unidentified factors.

THE FEED MARKETS

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Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

ALFALFA MEAL

Portland: Demand slow; trend lower; supply ample; 15% suncured $48.50, delivered Portland; 15% suncured $45, delivered California; dehydrated $50, delivered California.

Buffalo: Demand and supply fair; trend steady; $63, sacked, Boston.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $58.55@60.55; 17% dehydrated, no A $48.55@50.55; 13% fine suncured $37 @46.

Philadelphia: Demand dull; supply fair; 17% dehydrated $63.50.

Ft. Worth: Demand fair; supply adequate; dehydrated 17% protein, no A guaranteed $46, basis f.o.b. Plainview area; northern origin 100,000 A $56.75@59.50, delivered Ft. Worth, depending on origin of tonnage, February shipment.

Chicago: Demand slow; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $52.50@53; 17% with no A guaranteed $43.50@44; 15% dehydrated no A $43.50@44; 13% fine ground suncured $43.50@44.

Boston: Demand slow; supply fair; dehydrated, 17% $63; suncured, 13%, No. 1 $53.

Los Angeles: Demand slow; supply ample; trend weak; 15% suncured $44; 17% dehydrated $45.50@47.

New Orleans: Demand improving; trend easier; supply adequate; 17% dehydrated, vitamin A guaranteed $55@58, non-guaranteed $50@53, 15% $48@51.

Kansas City: Market about steady with trading activity light outside of regular p.d.s. shipments; demand moderate; offerings ample; 17% dehydrated alfalfa meal with 100,000 units vitamin A guaranteed on arrival blended $52, sacked, Kansas City; straight guaranteed meal $48@49, sacked, Kansas City; no A guaranteed $38 @40, sacked, Kansas City; No. 1 fine ground suncured meal $37; No. 1 ¼-in. $36 and No. 2 ¾-in. $34, sacked, Kansas City.

Seattle: Demand and trend slack; supply good; 16% protein suncured $48.50 ton, delivered, carlots; 136,000 A unit dehydrated $44 ton, delivered, carlots.

St. Louis: Demand slow; trend steady; supply ample; dehydrated, 17%, 100,000 A $53.50 ton; suncured No. 1 fine ground 13% $43.50 ton, f.o.b. St. Louis.

Minneapolis: Market about unchanged on regular meal, with demand fair. Quotations: 17% dehydrated, 100,000 units of vitamin A guaranteed $53.50, granules and oil-treated $55.50; 18% dehydrated, 125,000 units of vitamin A $52.50@56.50, granules and oil-treated $58.50; non-guaranteed $43.50; bulk lots $3 ton less.

Memphis: Demand poor; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $56.80.

ALFALFA PELLETS

New Orleans: Demand fair; trend easier; supply ample; 17% dehydrated $58@60.

BARLEY FEED

Los Angeles: Demand fair; trend steady; supply ample; standard rolled $2.89, standard ground $2.85.

Ogden: Supply average; rolled $45@50, whole $38@43.

Philadelphia: Demand dull; supply fair; pulverized $48.

Seattle: Demand and supply good; trend steady; whole $58 ton, ground $58 ton, rolled $59 ton, all ex-warehouse, l.c.l., sacked.

Boston: Demand and supply fair; $48.50.

Portland: Demand good; trend higher; supply ample; rolled $59, ground $57.

Baltimore: Demand fair; supply adequate; $47.

Chicago: Demand fair to good; supply adequate; $38.

San Francisco: Demand fair; supply ample; rolled $60.50, ground $59.50.

New Orleans: Demand good; supply limited; trend steady; pulverized barley $52 @54.

BENTONITE (SODIUM)

Chicago: Demand very good; supply adequate; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $15.50; fine granular, 80-100 mesh $12.75; powder, 200 mesh $12.50; f.o.b. Belle Fourche, S.D., minimum 20-ton carlot: 80 granular $12.50 net; 200 mesh fine $12.25 net.

BLOOD FLOUR

Louisville: Demand slow; trend steady; supply heavy; $80@85 ton.

New Orleans: Demand dull; supply adequate; trend stronger; $87.50@90.

BLOOD MEAL

Los Angeles: Demand fair; trend steady; supply ample; $4@4.25 a unit of ammonia.

Ogden: Supply normal; $97.50 ton in 100-lb. bags, f.o.b. Ogden.

New Orleans: Demand slow; trend steady to stronger; supply adequate; $87.50@90, local origin.

Seattle: Demand slow; trend easy; supply ample; $80 ton, f.o.b. local packing plants, truck lots.

Louisville: Demand slow; trend steady; supply heavy; $80@85 ton.

Cincinnati: Demand fair; trend steady; supply adequate; $115.

Portland: Demand slow; supply ample; trend unchanged; $110.50.

Chicago: Demand slow; supply adequate; $115@117.50 ton, guaranteed 80% protein.

San Francisco: Demand slow; supply ample; $4.85 a unit of ammonia; screened $4.75 a unit of ammonia.

BONE MEAL

San Francisco: Demand good; supply fair; $58.

St. Paul: Market firm at $75 ton in large lots.

Louisville: Demand dull; trend steady; supply normal; $70@75 ton.

Cincinnati: Demand fair; trend steady; supply adequate; $80 ton, sacked, f.o.b. Cincinnati.

BONE MEAL (STEAMED)

Ft. Worth: Demand good; nearby supply exhausted; 14% phosphorus, 31% calcium $75@76, 100-lb. paper-lined burlaps, f.o.b. Houston, last half March.

Los Angeles: Demand fair; trend steady; supply ample; domestic $39.50.

St. Louis: Demand good; trend firm; supply adequate; $90@92 ton, sacked.

Seattle: Demand and trend steady; supply sufficient; $85 ton, ex-warehouse, l.c.l.

Boston: Demand slow; supply fair; $86.

Louisville: Demand dull; trend steady; supply normal; $75@80 ton.

Buffalo: Demand good; trend steady; supply ample; $85 ton, sacked.

Portland: Demand slow; supply ample; trend unchanged; $90.

Chicago: Demand slow; supply adequate; $67.50@72.50.

San Francisco: Demand good; supply ample; $82.50.

BREWERS DRIED GRAINS

Boston: Demand and supply good; 24% $53, bulk; 26% $53.50, bulk; $60, sacked, prompt shipment.

Chicago: Demand slow; supply adequate; 24% $49@49.50.

Los Angeles: Demand fair; trend steady; supply ample; $54, f.o.b. Van Nuys.

Philadelphia: Demand dull; supply light; $61.

St. Louis: Demand fair; trend lower; supply ample; $44 ton bulk, $49 ton sacked.

New Orleans: Demand slow; supply adequate; trend steady; 24% $52.50@53.

Ft. Worth: Demand slow; supply moderate; 26% nominal $55@56, prompt, delivered Ft. Worth.

Cincinnati: Demand fair; trend steady; supply adequate; $55.

Louisville: Demand fair; trend firm; supply ample; $50 ton.

Buffalo: Demand poor; trend lower; supply fair; $51.50, bulk, Boston.

BREWERS DRIED YEAST

Buffalo: Demand good; trend firmer; supply limited; $9.95 cwt.

Louisville: Demand fair; trend firm; supply normal; 10¢ lb.

Portland: Demand slow; supply ample; trend unchanged; 13¢.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10%@13½¢ lb., l.c.l.

Omaha: Demand good; supply poor; 11½¢ lb., carloads; 12½¢ lb., less than carloads.

St. Louis: Demand good; supply limited; 10¢ lb. in carlots; 10½¢ lb. in 5-ton lots; 11¢ lb. in ton lots; 11½@12¢ lb. in less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10½@12½¢, l.c.l.

San Francisco: Demand fair; supply good; 10½¢ lb.

Boston: Demand light; supply steady; 11@11½¢ lb.

Los Angeles: Demand good; trend steady; supply limited; 10¢.

BUTTERMILK-CONDENSED

Ogden: Supply average; $4.90, 100-lb. drum.

Los Angeles: Demand fair; trend steady; supply ample; 100-lb. drums $5.50, large barrels $4.75.

Philadelphia: Demand dull; supply fair; $4 cwt.

New Orleans: Demand poor; trend steady; supply ample; $4@5 cwt.

Portland: Demand slow; supply ample; trend unchanged; $4.75.

Chicago: Demand steady; supply fair; $3.50@3.75 cwt. in carlots.

Boston: Demand poor; supply ample; 4¢ lb.

San Francisco: Demand fair; supply good; $5.35 cwt.

Louisville: Demand fair; trend steady; supply ample; $4.25 cwt.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $12.48, flour $9.42.
Buffalo: Crystals $14.20, flour $10.20.
Toledo: Crystals $15.77, flour $11.77.
Boston: Crystals $14.62, flour $10.62.
Limecrest, N.J.: Crystals $9.50, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $8@9.

Seattle: Demand steady; supply ample; trend unchanged; $14 ton, ex-warehouse, truck lots.

Minneapolis: Plain $10; iodized (⅓ lb. KI per ton) $13.50; iodized manganesed $15.05.

Chicago: Plain $8.55 ton in 100-lb. bags, delivered.

Los Angeles: Demand fair; trend steady; supply ample; meal and flour $10.53 ton, carloads; grits $13.03 ton, carloads.

CHARCOAL

New Orleans: Demand slow; trend steady; supply limited; 40-lb. bags oak charcoal $2.40@2.50; poultry charcoal in 50-lb. bags $2.60@2.70.

Los Angeles: Demand slow; trend steady; supply ample; poultry charcoal, oak, 40-lb. bags, in ton lots $2.42.

Chicago: Demand quiet; supply limited; poultry charcoal $102 ton in 50-lb. multiwalls.

Boston: Demand slow; supply spotty; $95.

San Francisco: Demand steady; supply ample; $59.50.

COCONUT MEAL

Portland: Demand slow; supply ample; trend unchanged; $69.

Seattle: Demand slack; trend steady; supply sufficient; $68 ton, ex-dock, 30-day shipment from Philippines.

San Francisco: Demand fair; supply ample; solvent $60; expeller $63.

Los Angeles: Demand slow; supply ample; trend weak; cake, ex-dock, February $67@68.

COD LIVER OIL (FORTIFIED)

New York: Trend steady; price per lb. in 55-gal. drums (400 to 420 lb.): 300 ICU, 750 A 16@18¢, 1,500 A 17½@19½¢, 2,250 A 19@22¢, 3,000 A 19½@23¢; 600 ICU, 1,500 A 18@19½¢, 2,250 A 20@22¢, 3,000 A 22@ 23½¢; f.o.b. New York, New Jersey, Massachusetts or Pennsylvania. Ranges include variance in offerings and f.o.b. shipping points.

Boston: Demand slow; supply good; 600 D, 2,250 A 22¢ lb.; 300 D, 2,250 A 21¢; 300 D, 1,500 A 18½¢.

CONDENSED FISH SOLUBLES

Boston: Demand active; supply fair; 3¾ @4¢ lb.

Los Angeles: Demand good; trend steady; supply limited; 4½¢.

CORN GERM MEAL

St. Louis: Demand good; trend steady; supply limited; $44 ton bulk, $49 ton in burlap sacks, St. Louis.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $51.77, meal $71.77.
Atlanta: Feed $58.92, meal $78.92.
Birmingham: Feed $57.18, meal $77.18.
Boston: Feed $56.15, meal $76.15.
Chicago: Feed $46, meal $66.
Cleveland: Feed $53.04, meal $73.04.
Denver: Feed $55, meal $75.
Ft. Worth: Feed $53.50, meal $73.50.
Indianapolis: Feed $50.50, meal $70.50.
Kansas City: Feed $46, meal $66.
Louisville: Feed $52.11, meal $72.11.
New Orleans: Feed $54.88, meal $74.88.
New York: Feed $55.69, meal $75.69.
Norfolk: Feed $55, meal $75.
Philadelphia: Feed $55.23, meal $75.23.
Pittsburgh: Feed $53.50, meal $73.50.
St. Louis: Feed $46, meal $66.

CORN OIL MEAL

New Orleans: Demand fair; trend steady; supply adequate; $53.88@54.88.

Cincinnati: Demand fair; trend steady; supply adequate; $53.80@54.

Louisville: Demand dull; trend firm; supply normal; $53.80 ton.

COTTONSEED OIL MEAL

Philadelphia: Demand dull; supply fair; $69.50.

Ogden: Supply average; 41% $68@73.

Ft. Worth: Demand fair; supply adequate; carlots, sacked, central and north Texas origin, 41% old process $61@62; solvent, 41% low gossypol $60, delivered Ft. Worth, February; pellets $2 additional.

Los Angeles: Demand quiet; supply ample; trend steady; $62.

Wichita: Demand slow; supply ample; 41% $64.50.

New Orleans: Demand dull; trend lower; supply ample; 41% old process $70.50@73.

Buffalo: Demand poor; trend steady to lower; supply good; $69.85, sacked, Boston.

Cincinnati: Demand fair; trend steady to easy; supply adequate; $61.50@64.

Louisville: Demand dull; trend easy; supply normal; old process $61.50 ton; new process $60.50 ton.

Portland: Demand slow; trend lower; supply ample; $62, f.o.b. Los Angeles.

Chicago: Demand slow; supply plentiful; hydraulic $62.50; solvent $61.50.

Boston: Demand cautious; supply adequate; $71.50.

San Francisco: Demand good; supply ample; expeller $68.48, solvent $67.46.

Atlanta: Demand fair; trend weak; supply ample; 41% $60, sacked, immediate.

Memphis: Demand poor; trend down; supply plentiful; prime 41% protein, old process $61.50, sacked; new process, 41% solvent $48, sacked.

Kansas City: Market weak with demand fair and offerings adequate; trend lower; $48.50@50, sacked, Memphis for solvent; $52, sacked, Memphis for old process.

Seattle: Demand slow; trend steady; supply good; $78 ton, delivered, carlots, 41% expeller process.

A AND D FEEDING OIL

Chicago: Demand fair to good; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 7½@9¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago; drums included.

Boston: Demand slow; supply good; 600 D, 1,500 A 17¢ lb.; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16¢; 300 D, 750 A 15¢.

Buffalo: Demand steady; supply adequate; 300 D, 750 A 18½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 2,250 A 23½¢ lb.; 300 D, 3,000 A 26½¢ lb.; 600 D, 4,000 A 21¢ lb.; straight vitamin A feeding oil 10½@11½¢ per M. U., drum lots, drums included, basis Buffalo.

Minneapolis: 10,000 A 22¢ lb.; 300 D, 2,250 A 20¢ lb.; 300 D, 1,500 A 18¢ lb.; 300 D, 750 A 16¢ lb.

New York: Trend steady; price per lb. in 55-gal. drums (400 to 420 lb.): 300 ICU, 750 A 13½@17½¢, 1,500 A 15½@19½¢, 2,250 A 17½@21½¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@20½¢, 2,250 A 18@19½¢, 3,000 A 20@25¢; f.o.b. New York, New Jersey, Massachusetts or Pennsylvania. Ranges include variance in offerings and f.o.b. shipping points.

Seattle: Demand and trend steady; supply ample; 300 D, 2,250 A 22¢ lb., 300 D, 1,500 A 19¢ lb., 300 D, 750 A 17¢ lb., all ex-warehouse, drums included.

D ACTIVATED ANIMAL STEROL, POWDERED

Cincinnati: Demand poor; trend steady; supply ample; 1,500 ICU 11@12¢; 3,000 ICU 18¢, warehouse.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 10@13.6¢ bagged, 11@12¢ drums; 3,000 ICU 16@19¢ bagged, 17@18¢ drums; f.o.b. New York and New Jersey.

Kansas City: Demand fair; trend steady; supply adequate; 10½@11¢ lb.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: $49.50.
Houston: 19% $69.50
Wales, Tenn.: $62.10.

Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17% $56 net ton, f.o.b. Coronet in 100-lb. multiwall bags, $54 in bulk; minimum phosphorus 14.5%, minimum calcium 34%, maximum fluorine 0.145% $48 net ton, f.o.b. Coronet, in 100-lb. multiwall bags, $46 in bulk.

DICALCIUM PHOSPHATE

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $82.99 ton, delivered; $3 ton less in bulk.

Trenton, Mich.: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $94.50, f.o.b. Trenton, in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwall bags.

Adams, Mass.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Adams, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Columbia, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis.

Bonnie, Fla.: Demand improving; supply adequate; minimum phosphorus 18½% granular $74. Freight equalized with closest dicalcium phosphate producing point, carload basis.

East St. Louis: 18½% phosphorus $83.25, bagged, f.o.b. cars.

Chicago: Demand fair; supplies adequate; stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 per net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn., less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville, less than 20,000 lb. $104.50; freight equalized with St. Louis, Trenton, Mich., and Godwin, Tenn.; bulk, boxcars or hoppers $3 net ton less than bagged material.

DISTILLERS DRIED GRAINS

Philadelphia: Demand dull; supply very light; $66.50, nominal.

New Orleans: Demand poor; trend higher; supply light; $63@66.50.

Louisville: Demand good; trend steady; supply fair; bourbon grains, light $57, dark $58, solubles $76.

Cincinnati: Demand fair; trend steady; supply tight; $67.50@68.50.

Buffalo: Demand good; trend steady; supply poor; $61, bulk, Boston.

Boston: Demand spotty; supply adequate; Canadian, light $64, dark $65.

San Francisco: Demand fair; supply ample; $57.50; solubles $80.

DRIED BEET PULP

San Francisco: Demand good; supply fair; $52.35.

Los Angeles: Demand slow; trend weak; supply ample; $51.02, paper bags.

New Orleans: Demand fair; trend steady; supply light; $64@65.

Atlanta: Demand slow; trend steady; supply ample; $72.50, sacked, immediate.

Chicago: $60.

Cincinnati: Demand fair; supply adequate; $61@65.

Boston: Demand good; supply adequate; $66@68.

Seattle: Demand good; trend strong; supply tight; $65 ton, delivered, carlots.

Ogden: Supply normal; $45@50 ton.

Ft. Worth: Demand slow; supply moderate; carlots, 50-lb. papers $63@65, delivered Ft. Worth, February shipment.

DRIED BUTTERMILK

Ogden: Supply normal; $2.65, 100-lb. bag.

Wichita: Demand slow; supply adequate; $8.25 cwt.

Los Angeles: Demand fair; trend steady; supply ample; $13.75.

New Orleans: Demand fair; trend steady; supply limited; $11.50@12 cwt.

Minneapolis: Market steady; demand limited; $9.50@10 cwt.

Ft. Worth: Demand very slow; supply extremely limited; local production $12 cwt., f.o.b. Ft. Worth.

Louisville: Demand slow; supply ample; trend steady; 10@10½¢ lb.

Buffalo: Demand good; trend firmer; supply limited; $10.60 cwt.

Boston: Demand poor; supply short; 11½¢ lb., nominal.

Chicago: Demand light; supply adequate; medium acid 9@9½¢; sweet cream 10¼@ 10½¢, in carlots.

San Francisco: Demand fair; supply ample; $11 cwt.

DRIED CITRUS PULP

Boston: Demand light; supply ample; $32, f.o.b. Florida points.

San Francisco: Demand good; supply fair; meal $55.50.

Atlanta: Demand fair; supplies ample on pulp, limited on meal; trend steady; pulp $44, meal $41.50, sacked, immediate.

Buffalo: Demand and supply fair; trend steady; $32, sacked, f.o.b. Florida points.

Los Angeles: Demand good; supply scarce; f.o.b. southern California producers' plants: nominal, orange $48 sacked, $45 bulk.

New Orleans: Demand good; supply sufficient; trend steady; $48@50.

DRIED SKIM MILK

Louisville: Demand slow; trend steady; supply normal; 11¾@12¢ lb.

Cincinnati: Demand fair; trend steady; supply adequate; 11¾¢.

Buffalo: Demand good; trend steady; supply ample; $11.50 cwt.
Portland: Demand slow; supply ample; trend unchanged; $12.50.
Minneapolis: Market unchanged; demand quiet; $11@11.50 cwt.
Chicago: Demand light; supply adequate; $11.25@11.50 cwt. in carlots.
Boston: Demand poor; supply plentiful; 12¢ lb.
San Francisco: Demand and supply fair; 13½¢ lb.
New Orleans: Demand poor; trend steady; supply plentiful; $11.50@12 cwt.
Los Angeles: Demand fair; trend steady; supply ample; $13.50.
Philadelphia: Demand dull; supply fair; $12.50.

DRIED WHEY

Philadelphia: Demand dull; supply fair; $6 cwt.
Ogden: Supply normal; $6.90, 100-lb. bag.
Los Angeles: Demand fair; trend steady; supply ample; fortified $6.15, unfortified $6.
New Orleans: Demand slow; supply ample; trend steady; $6@6.50 cwt.
Ft. Worth: Demand fair; supply adequate; carlots, standard $6 cwt., sacked, delivered Ft. Worth or any Texas point or in ton lots, f.o.b. warehouse, Ft. Worth.
Cincinnati: Demand fair; trend steady; supply adequate; $6.
Louisville: Demand slow; trend firm; supply ample; 6@6¼¢ lb.
Buffalo: Demand poor; trend steady; supply fair; $6 cwt., delivered.
Chicago: Demand steady; supply adequate; $6 cwt. in carlots.
Portland: Demand slow; supply ample; trend unchanged; $6.50.
Boston: Demand poor; supply plentiful; 6¢ lb.
San Francisco: Demand steady; supply good; $6 cwt.
Kansas City: Demand fair; supplies adequate; partially delactosed $6.50 cwt., straight grade $6 cwt.
Minneapolis: Market steady at $5.25 cwt.
Seattle: Demand steady; supply ample; trend unchanged; $7 cwt., ex-warehouse, l.c.l.

FIELD SEEDS

St. Louis: Demand fair; trend firm; supply ample; timothy $8.50@9.50 cwt., red top $40@45 cwt., red clover $33@35 cwt., lespedeza $5.50@6.50 cwt.

FISH MEAL

Portland: Demand steady; supply ample; trend unchanged; $2.25, f.o.b. Vancouver; $2.40, f.o.b. California.
Boston: Demand slow; supply improved; $146@148.
Chicago: Demand slow; supply adequate to demand; menhaden fish meal, 60% protein, f.o.b. East Coast $142@146 ton; 60% blended West Coast $138@140; Northwest herring-salmon blend $138@140; herring meal, 73% protein $2.05@2.10 a unit of protein.
Minneapolis: Market steady to easier; $2.05@2.10 a unit of protein, West Coast, for 70% herring; $160@163, Minneapolis, for 60%.
Atlanta: Demand fair; trend weak; supply ample; 60% $146, sacked, immediate.
Seattle: Demand fair; trend steady; supply sufficient; Canadian herring meal $2.35 a unit protein, delivered Seattle, carlots.
San Francisco: Demand slow; supply ample; $2.45 a unit of protein.
Los Angeles: Demand fair; trend steady; supply ample; $2.35 a unit of protein.
Ogden: Supply normal; $2.20 a unit, f.o.b. Coast; 65% $171@173.
New Orleans: Demand slow; supply adequate; trend steady; $150@157.
Ft. Worth: Demand good; supply light; pilchard fullmeal 63% protein, solubles added back $157; 60% Peruvian $153, last of February, f.o.b. Houston.
Buffalo: Demand good; trend steady; supply limited; 60% protein menhaden $160 ton, bulk; $163, sacked.

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Manufacturers of Dehydrated Alfalfa Meal
Established 1940
A. J. Landby, Warroad, Manager
Office Phone 27 Res. Phone 153
Mill at Swift, Minn.

Cincinnati: Demand fair; trend steady; supply adequate; $160@165.
Louisville: Demand slow; trend steady; supply ample; $160@165 ton.

HAY

Ogden: Supply normal; $1.25 bale; $24@30 ton in the barn.
Wichita: Demand slow; supply plentiful; prairie $18@22, alfalfa $20@24.
Ft. Worth: Demand fair for alfalfa, extremely slow for others; supply sufficient; carlots, baled, No. 1 alfalfa $36@38, No. 2 $34@36; prairie, No. 2 $26@28; Johnson grass, No. 2 $24@26, delivered TCP.
Philadelphia: Demand dull; supply fair; as to quality $30@32.
New York: Demand fair to good; trend steady; supply adequate; timothy, No. 1 $36@38, No. 2 $29@32, No. 3 unquoted
Seattle: Demand strong; trend firm; supply tight; $44 ton, delivered, carlots, U.S. No. 2 green.
St. Louis: Demand fair; trend steady to weak; supply ample; No. 1 timothy $25@28 ton; No. 1 prairie $25@28 ton; No. 1 alfalfa $23@25 ton; No. 1 clover $18@20 ton; straw $14@15 ton.
Los Angeles: Demand slow; trend steady; supply liberal; U.S. No. 1 $33@34; U.S. No. 2 leafy $31.50@33; U.S. No. 2, green $31@32; U.S. No. 2 $29@30.
New Orleans: Demand fair; trend firm; supply limited; timothy and clover $28@30; baled alfalfa $36@38; prairie $24@26.
Louisville: Demand fair; trend steady; supply good; jobbers quoting all No. 1 hays, such as timothy, alfalfa, clover or mixed clover and timothy or other mixes, at around $30 ton or less; lespedeza $25 tops; straw $13@14.
Cincinnati: Demand slow; trend steady; supply adequate; No. 1 timothy (new) $21; first cutting No. 1 alfalfa (new) $21, second cutting No. 1 $25; fancy No. 1 clover and timothy mixed $27; No. 1 red clover $22; bright wheat or oats straw $18.
Portland: Demand good; trend firm; supply ample; $42.50.
Buffalo: Demand very weak; No. 2 timothy $18 ton; No. 2 alfalfa $25@28; straw, strong $12@15.
Boston: Demand steady; supply plentiful; No. 2 timothy $35; second cutting alfalfa $47.

HOMINY FEED

Chicago: Demand fair; supply adequate; $45@45.50.
Boston: Demand slow; supply plentiful; $51 bulk, $55 sacked.
Seattle: Demand slow; trend steady; supply good; $60 ton, delivered, carlots, sacked.
Kansas City: Market about steady; few offerings, limited interest; $44.50@45, sacked, Kansas City.
Memphis: Demand poor; trend lower; supply ample; white $46, yellow $49.
New Orleans: Demand slow; supply adequate; trend steady; $53@55.50.
Buffalo: Demand fair; trend steady to lower; supply good; $60.75, bulk, Boston.
Cincinnati: Demand fair; trend steady; supply adequate; $46@48.90.
Louisville: Demand fair; trend easy; supply normal; $48@49 ton.

LINSEED OIL MEAL

Ft. Worth: Demand slow; supply adequate; carlots, 36% or better $71.89, February-June, delivered Ft. Worth; pellets $2.50 premium.
Philadelphia: Demand and supply fair; $72.
Wichita: Demand fair; supply sufficient; 34% $74.
New Orleans: Demand slow; supply adequate; trend steady; 32% or better $73@75.50.
Minneapolis: Prices showed some signs of stabilizing after further declines this week. Some new export interest was indicated. Quotations: 36% $49@49.50, bulk, Minneapolis; 22% flaxseed screenings oil feed $36, same basis.
Seattle: Demand slack; trend steady; supply good; $80 ton, delivered, carlots, 36% expeller.
Los Angeles: Demand quiet; supply ample; trend steady; $63@64.
Cincinnati: Demand fair; trend steady; supply adequate; $65.75@70.75.
Louisville: Demand slow; trend weak; supply normal; new process $65.25 ton; old process $72.25 ton.
Portland: Demand slow; supply ample; trend unchanged; $64, f.o.b. Los Angeles.
Boston: Demand slow; supply spotty; $73.
Chicago: Further declines were registered by linseed oil meal during the week ending Feb. 15. Supplies are adequate and buyers seem to be in a good inventory position. Quotations Feb. 15: solvent linseed oil meal $59.50@60, expeller $66.50@67.
San Francisco: Demand and supply fair; $71.

MALT SPROUTS

New Orleans: Demand fair; trend steady to firm; supply adequate; $45@46.50.
Chicago: Demand and supply fair; No. 1 $39.50@40.
St. Louis: Demand fair; trend lower; supply ample; No. 1 bulk $34 ton, No. 1 sacked $40 ton, No. 2 bulk $31 ton.
Cincinnati: Demand fair; trend easy; supply adequate; No. 1 $47.50@48.

MEAT SCRAPS

Buffalo: Demand good; trend higher; supply ample; 50% meat scraps $67.50 ton, bulk; $70, sacked.
Cincinnati: Demand fair; trend steady, supply adequate; 50% $65@67 ton, sacked, f.o.b. Cincinnati.
Louisville: Demand slow; trend steady; supply heavy; $65@70 ton.
Portland: Demand slow; trend lower; supply ample; $1.40.
St. Paul: Market steady; demand fair; supplies fair; $68@71 for 50% meat and bone scraps.
Kansas City: Demand moderate; offerings ample; 50% meat and bone scraps $65@70, sacked, Kansas City.
St. Louis: Demand fair; trend steady; supply adequate; 50% $66@67 ton bulk, $71@72 ton in paper sacks, $70@71 ton in burlap sacks.
Chicago: Demand slow; supply heavy; 50% protein $65@67; 55% $77.
Boston: Demand fair; supply adequate; $1.10 a protein unit; converted, 50% $67.50.
San Francisco: Demand fair; supply good; $1.50 a unit of protein.
Ogden: Supply normal; $77.50 ton, in 100-lb. bags.
Wichita: Demand good; supply about offsets demand; 50% $70, f.o.b. plant; 55%, no quotations, no offerings.
Los Angeles: Demand fair; trend steady; supply ample; $1.55 a unit of protein.
New Orleans: Demand fair; trend steady; supply sufficient; 50% meat and bone scraps $66@68, local origin.
Ft. Worth: Demand fair; supply moderate; meat and bone, 50% $66@68, sacked, f.o.b. or delivered Ft. Worth.
Seattle: Demand slack; trend easy; supply ample; $70 ton, ex-warehouse, truck lots.

MILLET

St. Louis: Demand fair; trend steady; supply ample; recleaned Early Fortune $3.50 cwt., sacked; recleaned White Proso $3.60 cwt., sacked.

MILLFEED

Minneapolis: Market continues firm, with restricted offerings more than demand governing prices. Quotations: bran $39.50@40.50, standard midds. $40.50@41, flour midds. $44@45, red dog $46@48.
Kansas City: While activity has slowed down a little the trend is now steady on price and represents a fair increase over levels a week ago; bran $36.75@37.25, shorts $38.50@39.25, sacked, Kansas City; middlings $35.25@36.75, bulk, Kansas City.
Wichita: Demand fair; supply adequate; basis Kansas City, Feb. 14: bran $36.75@37.25, shorts $39@39.50; both bran and shorts advanced $1 ton, compared with the preceding week.
Ft. Worth: Demand fairly active; offerings of bran light, shorts moderate; carlots, burlaps, prompt, wheat bran $43.50@44.50; gray shorts $45.50@46.50, delivered Texas common points; $1 higher on bran and shorts compared with previous week.
Chicago: Millfeeds bucked the trend toward lower prices set by most other ingredients during the week ending Feb. 15, and remained steady to slightly higher. Flour mill running time is short, removing any pressure from the market. Quotations Feb. 15: bran $43, standard midds. $43, flour midds. $48@49, red dog $50.50@51.50.
St. Louis: Demand fair; trend steady; supplies ample; bran $41.25@41.75, shorts $42.75@43.25, St. Louis switching limits.
Louisville: Demand fair; trend stronger; supply good; bran $46.95, mixed feed $47.20, shorts $47.20, standard midds. $50.40.
Cincinnati: Demand fair; trend steady; supply adequate; bran $47.50, middlings $47.50@48.50.
Buffalo: Millfeed prices continued to advance. Light demand balanced against curtailed flour output put the market in a comfortable position and levels remained firm. Heavy feeds are tight and shipments behind schedule. Bran $46.50@47.25, standard midds. $45@47.50, flour midds. $51.50@55, red dog $53.50@55.
Philadelphia: Demand fair; supply ample; bran $53, standard midds. $53, red dog $59.
New York: Demand fair; trend steady; supply sufficient; bran $53.50@54, standard midds. $54@54.50.
Boston: Demand spotty; supply adequate; Canadian bran and middlings $52.
New Orleans: Demand slow; trend steady to stronger; supply average; bran $45@46.25, shorts $47@48.50.
Memphis: Demand poor; trend steady; supply ample; wheat bran $44, standard midds. $45, gray shorts $45.50.
Seattle: Demand slack; trend easy; supply good; $43 ton, delivered common transit points, carlots.
Portland: Demand slow; trend lower; supply ample; $41.
San Francisco: Demand fair; supply ample; $47.50; red bran $53.
Los Angeles: Demand fair; trend steady; supply ample; mill run, Utah-Idaho billing, sacked $48@48.50; red bran, delivered CCP, sacked $54@55.
Ogden: Supply normal; to Utah and Idaho: red bran and mill run $40, middlings $45; to Denver: red bran and mill run $47, middlings $52; to California: red bran and mill run $47.50, middlings $52.50, f.o.b. San Francisco and Los Angeles.

MINERAL FEED

Wichita: Demand good; supply insufficient; all-purpose with iodine, 50-lb. blocks $92.50, 100-lb. bags $87.50, f.o.b. plant.
Ogden: Supply normal; $105 ton, 50-lb. blocks; $95 ton, granular, 50-lb. bags.
Sioux City: 50-lb. mineral blocks, 8.1% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.
Seattle: Demand steady; supply ample; trend unchanged; high phosphorus mixtures $65 ton, competitive brands $44 ton.
Ft. Worth: Demand fair; supply ample; all-purpose granules $83, block $92; mineral phosphorus, 6% granules $95, block $105; cattle-sheep mineral, 7% phosphorus, granules $93, block $101; hog mineral phosphorus 3½%, granules $82, phosphorus 2% $69 (all in 50-lb. paper bags).
Portland: Demand slow; supply ample; trend unchanged; $42.
San Francisco: Demand steady; supply good; all-purpose with iodine $70.

MOLASSES

Portland: Demand slow; supply ample; $26.
Boston: Demand steady; supply ample; 16½¢ gal., in tank cars.
San Francisco: Demand and supply good; $25 ton, f.o.b. cars Richmond, Cal.
Beaumont: Trend steady; blackstrap 11¢ gal., in tank cars and tank wagons, f.o.b. Beaumont.
New York: Trend steady; blackstrap 12½¢ gal., tank cars, tank wagons, f.o.b.
Kansas City: Trend steady with demand only fair and offerings adequate; for spot shipment 13@14¢ gal., New Orleans; last half February 13½@14½¢ gal.
Atlanta: Citrus molasses—demand good; supply very limited; trend strong; $19 ton, f.o.b. Florida producing points, immediate.
Memphis: Demand fair; trend higher; supply ample; blackstrap 13½¢ gal., tank car, f.o.b. New Orleans.
Seattle: Demand steady; supply good; $26 ton, f.o.b. Seattle, tank car lots.
Los Angeles: Demand good; trend steady;

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Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Galveston, Enid, Minneapolis, Norfolk, Nashville, Louisville, Memphis, Houston

supply ample; $25, f.o.b. tank cars; $25.25, f.o.b. tank trucks, both Los Angeles harbor.

Minneapolis: Market about steady; demand fair; 13¼@13½¢ gal., f.o.b. New Orleans; $26 ton, West Coast.

New Orleans: Demand fair; trend steady to stronger; supply adequate; 14¢ gal. in tank cars, f.o.b. New Orleans.

Ft. Worth: Demand good; supply moderate; blackstrap 15¢ gal., f.o.b. Houston, carlots, delivered Ft. Worth, cars and/or trucks $32.65, seller's market price on date of shipment, maximum 15¢, February shipment.

Louisville: Demand fair; trend steady; supply good; 13¢ gal., tank car lots, f.o.b. Gulf ports.

Buffalo: Demand good; trend steady; supply fair; 16½¢ gal., f.o.b. Albany.

Cincinnati: Demand fair; trend steady to easy; supply adequate; 13@13½¢ gal., New Orleans.

NIACIN

New York: Trend firm; $8 kilo, 50-kilo lots; $8.10 kilo, 10-kilo lots; $8.20 kilo, 5-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $20.50@21; pulverized white oats $46.50@47; rolled oats $85@86.

Louisville: Demand fair; trend steady; supply normal; reground $21.40; rolled oats $84.40; feeding oatmeal $78.40; pulverized white oats $46.40, steamed crimped white oats $65.40.

Memphis: Demand fair; trend steady; supply ample; 3½% protein, reground oat feed $20.30.

St. Louis: Demand fair; trend steady; supply ample; reground oat feed $16.50 in 100-lb. burlap sacks; pulverized white oats $48 ton, choice $46.

Seattle: Demand and trend steady; supply good; feed oats $64 ton, ground oats $64 ton, rolled oats $68 ton, both ex-warehouse, l.c.l.

Los Angeles: Demand slow; supply ample; trend steady; white pulverized $64.

Philadelphia: Demand dull; supplies fair to light; pulverized white oats $50; Canadian oat feed $28.50, domestic $23.50.

Boston: Demand slow; supply steady; white pulverized, Canadian $50, domestic $52.90; ground mixed $43.50; reground oat feed $22.50@24.

New Orleans: Demand fair; trend steady; supply adequate; steam crimped oats $67@69, pulverized white oats $49.50@51.50, mixed feed oats $40@42.

Ft. Worth: Demand fair; supply adequate; oat millfeed $42.80; reground oat millfeed $25.30, delivered.

Chicago: Demand stagnant; supply adequate; reground oat feed $14; fine ground feeding oatmeal $70@72; feeding rolled oats $79@81.

Minneapolis: Demand is limited, with prices on some items reduced. Quotations: feeding rolled oats $80, standard pulverized $40@43, feeding oatmeal $65@66.50, reground oat feed $14, crimped oats $56.

Portland: Demand good; trend unchanged; supply ample; rolled $67, ground $65, cleaned $68.

OYSTER SHELL

New Orleans: Demand fair; trend steady; supply ample; $15@18, local origin.

Los Angeles: Demand and trend steady; supply ample; local $18.25; eastern $26.

Louisville: Demand good; trend firm; supply normal; $20.39.

Boston: Demand and supply steady; in paper $22.34.

Portland: Demand slow; supply ample; trend unchanged; western $35, eastern $29; granite and crystal grits, both $25.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Seattle: Demand steady; supply good; trend unchanged; eastern $35 ton, western $28 ton, both ex-warehouse, l.c.l.

PEANUT OIL MEAL

Atlanta: Demand poor; trend weak; supply ample; 45% $58, sacked, immediate.

PEAT MOSS

Portland: Demand slow; supply ample; trend unchanged; $3.25.

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Boston: Demand steady; supply adequate; $2.90@3 bale.

San Francisco: Demand fair; supply ample; $3.35 bale.

Chicago: Demand good; supply ample; $3.65@3.75 standard 7½ cu. ft. bale.

Philadelphia: Demand dull; supply ample; $2.90, f.o.b. pier.

New Orleans: Demand good; supply adequate; trend steady; standard bale German moss $3@3.45.

Los Angeles: Demand and trend steady; supply adequate; Canadian $3.40 in 300-bale lots, delivered California main line points; German and Holland $3.45.

POTASSIUM IODIDE, U.S.P.

New York: Trend steady; U.S.P. granulated and powder, free-flowing powder $1.90 lb. in 200-lb. lots $1.92 lb. in 100-lb. lots, $1.95 lb. in 25-lb. lots; 90% KI in calcium stearate, calcium carbonate or magnesium carbonate mixtures, $1.81 lb. in 200- and 250-lb. lots, $1.83 lb. in 100-lb. lots, $1.86 lb. in 25-lb. lots, f.o.b. New Jersey; freight prepaid except on 25-lb. lots.

St. Louis: Demand fair; trend firm; supply ample; 100% pure potassium iodide, U.S.P., 250-lb. average in drums $1.90, 100-lb. lots in fiber drums $1.92; potassium iodide calcium stearate mixture, 225 lb. in leverpak drums $1.81, 100-lb. lots in fiber drums $1.85.

RIBOFLAVIN

New York: Trend firm; feed grade (in feed supplements): 6¢ gram in 3.63 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Los Angeles: Demand good; supply light; trend steady; bran $55.81.

New Orleans: Demand good; supply adequate; trend steady; $49@52 on bran; no quotes on hulls.

Atlanta: Demand slow; supply ample; trend weak; bran $48, sacked, immediate.

Memphis: Demand nil; trend steady; none available; bran $43 (nominal), sacked, f.o.b. Arkansas points.

Ft. Worth: Demand fair; supply scarce; carlots, rice bran $37@38, prompt shipment, f.o.b. south Texas rice mills; hulls $3@4, f.o.b. mills.

San Francisco: Demand good; supply fair; bran $52, polish $59.

SCREENINGS

New Orleans: Demand fair; trend steady to lower; supply adequate; 4/64-in. grind $36@38.

Buffalo: Demand fair; trend steady to lower; supply good; ground, sacked $28.50, New York; unground, bulk $18.75, New York.

Cincinnati: Demand fair; trend steady to easy; supply adequate; Canadian $25@26; barley $15@18.

Minneapolis: Demand is very slow, with directions on contracts also falling off. Canadian prices dropped $1 ton. Quotations: country run $14@18, lights $2@12, mediums $12@20, heavies $20@30; Canadian $11, bulk, Duluth; Canadian ground $21, sacked, Duluth; flax screenings $16.

Chicago: Demand moderate; supply plentiful; ground grain screenings $26.75; Canadian, bulk $19.25.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Chicago: $22@23.75.
Kansas City: $23.15@23.80.
St. Louis: $21.40@22.
Des Moines: $22.50.
Philadelphia: $21.55@23.15.
Minneapolis: $23.15@23.85.
Buffalo: $22.50@23.10.
Atlanta: $18@18.70.
Memphis: $19.40@19.95.

SORGHUMS

Cincinnati: Demand fair; trend steady; supply adequate; $2.65.

Los Angeles: Demand moderate; trend steady; supply ample; No. 2 milo, delivered CCP, prompt $2.67½.

Ft. Worth: Demand slow; supply sufficient; carlots, bulk, No. 2 yellow $2.20@2.25, delivered TCP.

SOYBEAN OIL MEAL

Ogden: Supply average; $85@90.

Boston: Demand quiet; supply plentiful; $47.50, f.o.b. Decatur, prompt shipment.

Decatur: Demand fair; supply adequate; 44% bulk, unrestricted $49@49.50.

Portland: Demand slow; trend lower; supply ample; $43.

San Francisco: Demand fair; supply ample; $71.57.

Louisville: Demand dull; trend easy; supply normal; $59.80 ton.

Kansas City: Market still weak with prices reaching some of the lowest levels in recent years; demand only fair: $44@44.50, bulk, Decatur, for Kansas City and West; $48, unrestricted.

Atlanta: Demand slow; trend weak; supply ample; 44% $64.50, sacked, immediate.

Memphis: Demand weak; trend down; supply ample; prime 44% solvent $55, sacked, f.o.b. Memphis.

Seattle: Demand slack; trend easy; supply ample; $74.50 ton, delivered, carlots, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $49, bulk, Decatur.

Chicago: Soybean oil meal prices moved slightly lower during the week ending Feb. 15. Traders said the market appeared to reflect the trend apparent for several other feed ingredients, and any improvement will have to await a pick-up in formula feed business. Quotations Feb. 15: 44% protein soybean oil meal $58.25@58.75.

Philadelphia: Demand dull; supply ample; $47.50, bulk, Decatur.

Minneapolis: Market easier; demand limited; $40@41, bulk, Decatur.

Wichita: Demand slow; supply sufficient; 44% $65, f.o.b. Wichita.

Ft. Worth: Demand slow; supply sufficient; carlots, 44% $65.89@70.39, depending on origin; truck lots $64@65, prompt, delivered Ft. Worth.

Los Angeles: Demand slow; trend weak; supply ample; $74.07, delivered CCP.

New Orleans: Demand fair; trend steady to stronger; supply adequate; 40% $66@68.50.

SUNFLOWER SEED

St. Louis: Demand fair; trend steady; supply ample; large black $18 cwt., large gray $17.50 cwt., medium black $15.50 cwt., medium gray $15 cwt., small black and gray $10.50 cwt.

TANKAGE

Chicago: Demand slow; supply heavy; 60% protein $67.50@75.

COTTONSEED OIL MEAL FUTURES

Closing prices of cottonseed oil meal (41% protein) on the Memphis Merchants Exchange in dollars per ton (bulk):

	Feb. 10	Feb. 13	Feb. 14	Feb. 15	Feb. 16
March	45.75@ 46.50	49.25@ 46.00	44.00@ 44.75	43.50@ 43.75	....@ 43.25
May	46.00@ 47.00	45.50@ 46.25	45.00@ 45.75	44.75@ 45.25	44.50@ 45.00
July	46.50@ 47.25	46.25@ 47.00	45.75@ 47.00	45.25@ 45.50	....@ 45.25
October	49.85@ 50.25	49.10@ 49.50	48.85@ 49.25	48.50@ 48.90	48.25@ 49.25
December	50.00@ 51.00	49.50@ 50.00	49.00@ 50.25	48.25@ 49.50	48.25@ 49.50
January	50.25@ 51.00	49.25@ 49.50	48.75@ 50.00	48.25@ 49.50	48.25@ 49.50
September	....@	47.50@ 48.25	47.50@ 48.50	47.00@ 48.25	47.00@ 48.25

SOYBEAN OIL MEAL FUTURES

Closing prices of soybean oil meal (basis Decatur, Ill.) on the Chicago Board of Trade and on the Memphis Merchants Exchange, in dollars per ton (bulk basis):

CHICAGO

	Feb. 10	Feb. 13	Feb. 14	Feb. 15	Feb. 16
March	....@ 50.30	....@ 50.00	....@ 49.40	....@ 48.95	49.15@ 49.25
May	....@ 51.70	51.40@ 51.50	50.80@ 50.85	50.45@ 50.50	....@ 50.75
July	....@ 52.80	....@ 52.55	51.90@ 52.00	....@ 51.65	52.05@ 52.10
August	52.75@ 52.85	52.50@ 52.60	52.00@ 52.05	....@ 51.85	....@ 52.20
September	51.10@ 51.50	....@ 51.00	50.30@ 50.40	49.85@ 50.00	50.30@ 50.60
October	....@ 49.70	49.25@ 49.50	48.50@ 48.90	48.20@ 48.50	48.25@ 48.50
December	49.50@ 50.00	49.00@ 49.50	48.25@ 48.90	....@ 47.95	48.25@ 48.35

MEMPHIS (unrestricted)

	Feb. 10	Feb. 13	Feb. 14	Feb. 15	Feb. 16
July	....@ 52.60	52.35@ 52.45	....@ 51.90	51.50@ 51.60	51.90@ 52.00
August	....@ 52.75	....@ 52.60	52.00@ 52.15	51.75@ 51.95	52.05@ 52.15
March	50.00@ 50.25	49.75@ 49.80	....@ 49.00	48.85@ 48.90	48.90@ 49.10
May	51.55@ 51.75	51.35@ 51.65	....@ 50.75	50.30@ 50.45	50.65@ 50.75
September	50.95@ 51.15	50.85@ 51.25	50.00@ 50.25	49.70@ 49.80	50.00@ 50.50
October	49.40@ 49.75	49.10@ 49.40	48.40@ 48.90	48.20@ 48.75	48.20@ 48.75
December	49.25@ 49.75	49.20@ 49.75	48.25@ 49.00	47.90@ 48.50	48.20@ 48.75
January	49.25@ 49.75	49.10@ 49.75	48.25@ 49.00	48.00@ 48.50	48.20@ 48.75

Ft. Worth: Demand fair; supply moderate; 60% digester $77.50@80, f.o.b. Ft. Worth.

Kansas City: No change in the market with demand slow and offerings satisfactory; $65@70, sacked, Kansas City, for 60% digester.

St. Paul: Market steady; demand fair; supplies adequate; $65@68 for 60% digester.

Louisville: Demand slow; trend steady; supply heavy; $70@75 ton.

New Orleans: Demand improving; trend steady; supply limited; 60% $75@77.50.

WHEAT GERM MEAL

Buffalo: Demand fair; trend steady; supply poor; commercial grade $63, sacked, f.o.b. Buffalo.

New Orleans: Demand fair; trend steady; supply adequate; $64@66.

Chicago: Market easier at $65.

MACHINERY

(Continued from page 4)

Named to the board of directors were: E. P. McCreery, C. O. Bartlett & Snow Co., Cleveland; Irl A. Daffin, Daffin Mfg. Co., Lancaster, Pa., and Harold Alsted, Sprout, Waldron & Co., Muncy, Pa. Raymond J. Walter, New York, continues as secretary-treasurer.

Moderating the trade press panel was C. Robert Myers, Myers-Sherman Co., Streator, Ill. Mr. Strong presided over the morning session of the second day. Mr. Ronk presided the first day. James P. Corcoran, Mill Mutual Fire Prevention Bureau, Chicago, told of the formation of the national electrical code, which defines the rules of electrical installations and provides directions for safe and proper operations. Considerable discussion on electric motors followed his presentation.

During the annual business meeting the morning of the first day, the various committees made their reports. To serve on committees during the year ahead, the following appointments were made:

Koert S. Voorhees, Universal Hoist & Mfg. Co., Cedar Falls, Iowa, conventions and exhibitions; Russell B. Maas, Screw Conveyor Corp., Hammond, Ind., labor relations; George Sprackling, Daffin Mfg. Co., Lancaster, Pa., membership; O. K. Mayhew, Hart-Carter Co., Minneapolis, industrial practices; H. M. Soars, Sprout, Waldron & Co., Inc., Muncy, Pa., national defense; George F. Thomas, Prater Pulverizer Co., Chicago, liaison committee with the feed school at Kansas State; Mr. Myers, public relations; Royce C. Huss, Huss & Schlieper, Decatur, Ill., resolutions, and Mr. Strong, technical committee of engineers.

An inter-association technical committee will consist of the following members: Mr. Strong, Mr. Alsted, Mr. Thomas, and C. N. Hultberg, California Pellet Mill Co., Crawfordsville, Ind.

Mr. Soars and Mr. Thomas, retiring from the board of directors, received an ovation, and a resolution was passed commending them for their several years of service.

Lloyd Larson, Midwest Feed Manufacturers Assn., Kansas City, Mo., issued a strong appeal to members of the association to do all they can to obtain students for the feed technology program at K-State. He outlined the efforts of his association, describing material recently mailed to vocational agricultural teachers in an eight-state area in an attempt to enlist their efforts. He exhibited a booklet describing the school and told of a film his association had prepared which tells about the school.

A "status of the industry" luncheon, a closed affair, was held the first day, and a president's reception followed in the late afternoon. An industry-wide luncheon took place at noon the second day. The next meeting of the group will be at the French Lick Sheraton Hotel, French Lick, Ind., June 6-9.

MANEY BROS. MILL & ELEV. CO.
Minneapolis, Minnesota
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For quick or deferred shipment...

22% Flax Screenings Oil Feed

Carlot prices, f.o.b. Minneapolis:

BULK .....$36.00 Per Ton
SACKED ....$40.00 Per Ton

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Whitmoyer
KEMITRACIN
the purified ANTIBIOTIC complex—that does your feed antibiotic job better!
Send for complete scientific data.
WHITMOYER LABORATORIES, Inc.
MYERSTOWN, PENNA.

UP OR DOWN?

By Leonard W. Schruben
Agricultural Economist, Kansas State College

CORN PRICES AND SUPPORT RATES

Amid the discussion of price supports, did you ever wonder exactly what the effects have been on prices? A lot of people have, yet few claim to have much more than a partial answer.

Although this article isn't long enough to discuss even a small number of answers, we can bring you a few facts as to the relation between price supports and corn prices. You then will be in a better position to evaluate the results of possible changes in the farm price support program. The successful operation of a feed manufacturing business often depends upon how well market prices are judged.

Exhibit 1 shows the national annual average loan rate compared with the average farm price received for corn. Each dot represents a year.

As can be seen, the actual price has fluctuated above as well as below the support rate. In 1947, prices averaged 80¢ per bushel above the support rate; in 1955, 40¢ below.

Here is how to read Exhibit 1. First find the U.S. average loan rate on the bottom of the chart. Then read directly above this point until even with the annual average price received by farmers—as is shown on the left-hand scale. If this point is above the solid diagonal line, farm prices averaged higher than the loan. If below the line, prices averaged lower. If on the line, prices and support rates averaged the same.

For example, the national average support rate for the past five corn crops has been about $1.60 bu. The 1951 crop brought farmers an average of about $1.66; 1952, about $1.51; 1953, about $1.58, and 1954 about $1.38. If the first four months are a good indication, prices received by farmers may average about $1.20. The support rate in 1947 was $1.38, and the farm price averaged about $2.18 per bushel.

Exhibit 2 shows the relation among U.S. farm price of corn, the loan rate, and parity price. Farm prices used were those which prevailed in the middle of January, April, July, and October.

There have been three extended periods when prices have been below support rates. These occurred during the late 1930's, the late 1940's, and the present dip below loan which began in 1952.

As is shown by the accompanying exhibits, corn prices and support rates have followed each other rather closely since the price-support program began in 1933. However, it also is quite plain that prices can differ widely from support rates if history teaches a lesson. At any rate, to assume prices will stay close to support rates may be very costly to a feed manufacturer in buying corn to be used as an ingredient in manufactured feed.

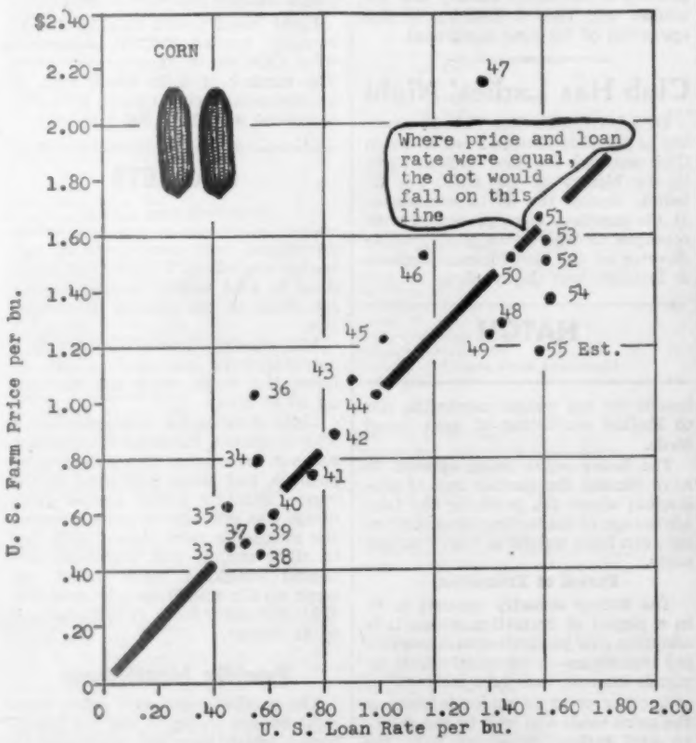


EXHIBIT 1—Corn: U.S. national average loan rate and U.S. average farm price in year beginning October, 1933-1955.

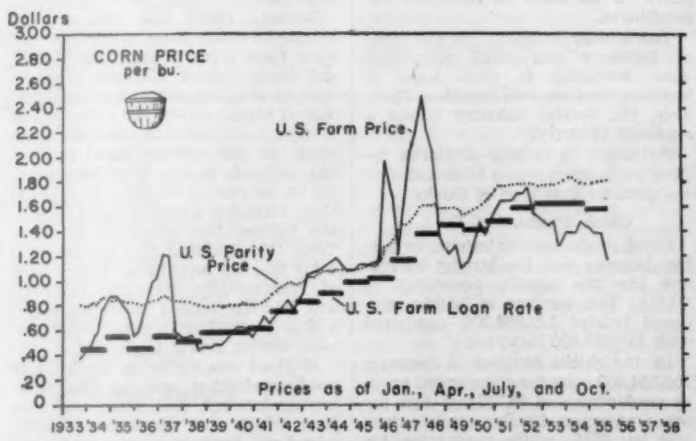


EXHIBIT 2—Corn: U.S. farm loan rate and U.S. parity and farm prices as of January, April, July and October, 1933-1955.

MILLFEED FUTURES

The following is a comparison of settling prices at Kansas City for Feb. 9 and 16:

	Feb. 9	Feb. 16
Bran—		
February	$36.65@37.35	$36.95@37.60
March	37.50@38.50	37.85@38.10
April	38.75@39.50	38.45@39.05
May	36.10@37.50	36.30@36.90
Shorts—		
February	$38.85@39.50	$38.45@38.85
March	40.00@41.00	39.40@40.35
April	41.25@43.00	40.95@42.00
May	42.00@44.50	....@*43.40

*Asked.

Oil Meal Futures Lose Ground at Memphis

MEMPHIS — Minus signs outnumbered the plus marks in protein oil meal futures at the Memphis Board of Trade the past week.

Losses, as compared with the previous week, extended to $2 ton, with cottonseed oil meal suffering the widest decline.

There was a slight advance in price early in the week. Later the market sold off on hedging and profit taking.

Dealers said feed business was fair and demand for soybean oil meal was about unchanged from the week before. The bean crush has been running heavy and some processors were reported storing meal in the Midwest.

Final unrestricted soybean oil meal prices were 50¢ ton lower to 5¢ ton higher, with sales of 15,900 tons compared with 32,100 tons the week before. Open interest declined 44 contracts.

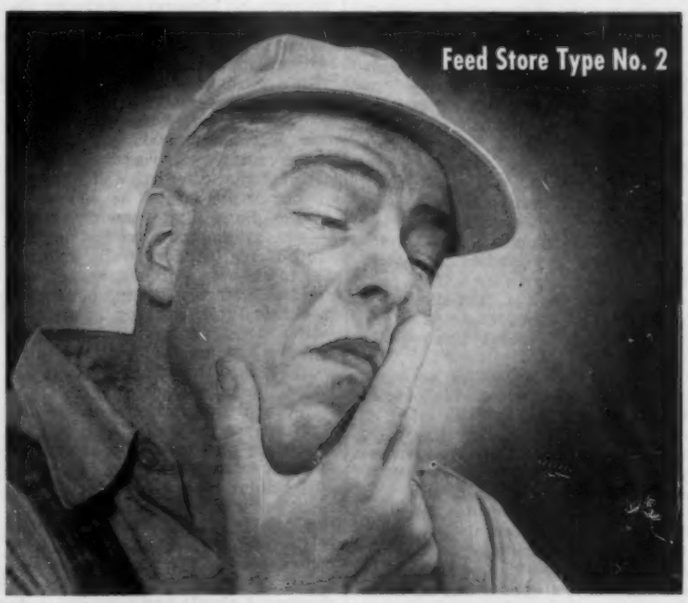
The Eastern Trunk Line soybean oil meal closings were unchanged to 50¢ ton lower. There were 1,200 tons sold during the week, compared to 800 tons a week earlier.

Cottonseed oil meal futures went as high as $48 ton during the advance early in the week, but by the week's close prices were down as much as $2 ton. January posted a long gain of 25¢ ton. Demand for cottonseed oil meal was called very slow.

The board of trade announced Feb. 13 that a September contract will be added to the cottonseed oil meal futures board. This addition is being made to provide a hedging facility between the July-August options. The September option was dropped during wartime.

CORRECTION

A story in the Feb. 4 issue of Feedstuffs told of the appointment of Wiley F. Ross as representative in Kansas and Oklahoma for the Cudahy Packing Co.'s feed department. The story said he would headquarter at Winfield, Neb. This should have been Winfield, Kansas. Mr. Ross succeeds George S. McPhie, who has been transferred to the company's Salt Lake City, Utah, plant.



the Skeptic

"Waaaaal, I don't know," says the skeptic. Deep down inside he actually doubts the value of feeding milk to babies.

But even dyed-in-the-wool skeptics forget their doubts when you offer them an Archer Feeding program. The "skeptic" becomes a *believer* in the feed store that sells Archer Booster Feed.

MORAL: No matter what feed store type you sell to, you'll make him happier . . . make him a better customer with Archer Booster Feeds.

Archer BOOSTER FEED

Super-fortified with BOOSTRYN

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Feed Sales Offices: Minneapolis Kansas City

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending:	Maine	Conn.	Penna.	Ind.	Ill.	Mo.	Del.	Md.
Dec. 10	811	542	656	712	187	604	1,371	1,086
Dec. 17	726	441	607	693	157	536	1,495	1,151
Dec. 24	728	467	597	646	137	563	1,414	1,074
Dec. 31	756	587	572	740	130	519	1,607	1,143
Jan. 7	774	489	580	634	173	493	1,588	1,280
Jan. 14	764	557	617	763	163	471	1,570	1,327
Jan. 21	740	563	606	645	141	516	1,493	1,181
Jan. 28	713	523	668	761	136	608	1,604	1,225
Feb. 4	759	483	698	716	177	617	1,543	1,279
Feb. 11	779	567	781	798	217	669	1,461	1,407

Week ending:	Va.	W. Va.	No. Car.	So. Car.	Ga.	Fla.	Ala.	Miss.
Dec. 10	1,157	437	1,368	329	3,617	231	1,372	928
Dec. 17	1,110	475	1,414	314	3,542	242	1,365	923
Dec. 24	1,093	508	1,408	243	3,761	213	1,446	906
Dec. 31	1,197	466	1,366	316	3,693	181	1,319	885
Jan. 7	1,220	507	1,397	190	3,997	212	1,479	897
Jan. 14	1,253	446	1,438	193	3,995	253	1,328	886
Jan. 21	1,118	483	1,387	209	4,093	239	1,430	886
Jan. 28	1,194	496	1,490	254	4,201	284	1,531	926
Feb. 4	1,265	504	1,551	271	4,566	262	1,452	1,065
Feb. 11	1,314	505	1,690	211	4,415	262	1,561	1,017

Week ending:	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1955-56	Total 22 areas 1954-55
Dec. 10	1,797	266	1,303	128	132	986	30,320	14,533
Dec. 17	1,824	292	1,797	232	131	999	30,395	14,801
Dec. 24	1,807	276	1,624	199	141	1,051	30,492	11,331
Dec. 31	1,730	240	1,708	202	140	1,018	30,416	14,346
Jan. 7	1,690	270	1,742	217	161	1,125	31,109	15,025
Jan. 14	1,674	262	1,727	229	184	1,087	31,187	14,397
Jan. 21	1,531	247	1,674	210	180	1,125	30,071	14,969
Jan. 28	1,707	282	1,817	227	187	1,208	32,039	17,019
Feb. 4	1,916	254	1,886	208	171	1,102	32,745	19,794
Feb. 11	1,935	300	1,902	212	186	1,105	33,306	19,825

CONFERENCE

(Continued from page 6)

careful study of the industry's financial needs and possible alternative means of meeting those needs, may prove helpful.

Credit is a useful and necessary factor of production, he said, but easy credit may not be as universal a cure for difficulties as it is often thought to be. The poultry industry's organizational structure and its financing continue to change. These and other evolutionary changes can be expected to continue as the structure and scope of the industry, and its sources and methods of financing, are adapted to even more efficient service.

Use of Dienestrol Diacetate

H. W. Swanson of White Laboratories, Inc., Kenilworth, N.J., spoke on the feeding of dienestrol diacetate to poultry. Investigations have shown that this estrogenic hormone produces improved bloom, due to added subcutaneous fat; an average weight increase of about 3% and an increase of almost 3% in yield because of better feed conversions, Mr. Swanson said.

Since early last year, dienestrol diacetate has been available from White Laboratories under the trade name of Lipamone, he said. One pound of the dry product per ton of finished feed supplies 31.75 mg. (0.007%) of active ingredient per pound—an adequate intake when the ration is fed the final three weeks before slaughter.

Through toxicity studies we found that feeding birds a much higher level than that—for almost a year—left no unfavorable effects. Also, treatment with dienestrol diacetate does not result in any addition of estrogenically active material to edible tissues.

However, ground raw offal from Lipamone-fed birds should not be fed to animals, particularly fur-bearing animals. The labeling instructions on the finished feed specify an over-night depletion period, and tests show that the non-hormonized feed consumed during this period effectively flushes the hormone out of the bird's gastro-intestinal system, he said. Since hormonized birds have a cushion of fat under the skin, they must be handled with more care to avoid bruising, especially during loading at the farm.

Of course, no one treatment can insure a high quality product. Good management, good breeding and good nutrition are still of paramount importance. Another development that improves market quality is the debeaking of young birds, he said. Drs. Combs and Romoser of the University of Maryland recently reported that debeaking one-day-old birds will reduce feather pulling, and thus barebacks, without any noticeable ill effects.

The benefits of automation in poultry houses were brought out by Dr. Glenn O. Bressler, Pennsylvania State College, State College, Pa.

"Although we are just beginning to hit our stride in poultry house automation, the trend is already far beyond the use of mechanical feeders, waterers and even mechanical push-button pit cleaners," he said. "While a fully-automatic poultry house may cost more per square foot, research has shown that these labor-saving devices make production costs per bird less than the conventional house and equipment."

Automation solves the wet litter problem, which makes it possible to get rid of dirty eggs, Dr. Bressler declared. Automation offers hope in avoiding slumps in egg production every time there's a sudden change in the weather. Automation promises to make it practical to house more birds in less space—giving greater efficiency from mechanical feeders, waterers, pit cleaners and similar devices.

"We have learned to run poultry houses lengthwise East and West, with a continuous band of insulating glass window wall facing directly South. This cleared the way for further automation, making it possible to use multiple tier roosts over a pit, with automatic feeders and waterers at four or five levels," he said.

"The Penn State poultry house combines automatic ventilation, the south-facing window wall, multiple tier roosts over a pit, automatic feeders and waterers at multiple levels, mechanical pit cleaning equipment, wall and ceiling insulation. We feel omission of any of these features would reduce the effectiveness of the house," he continued.

"With thermostatically controlled fans, we can use automation to take advantage of a maximum amount of wintertime sun on a clear day, without chilling the house during the night or on days when little sun heat is available. The fan control system is the secret to maintaining almost constant inside temperatures day and night, in spite of frequent outside changes. A simple roof overhang shuts out the direct rays of the high summer sun. These rays are changed from light to heat as they hit the ground and so do not get inside the house, making it possible to keep inside temperatures from climbing higher than those outside."

Fay Clemons Promoted By Philip R. Park, Inc.

DES MOINES, IOWA—Promotion of Fay Clemons of Des Moines, to assistant sales manager, has been announced by Philip R. Park, Inc., San Pedro, Cal., and Dubuque, Iowa.

Mr. Clemons will work directly with Cedric R. Bunten, general and sales manager, in coordination of field sales for ManAmar and the Philip R. Park feed supplements.

Daffin to Award Mobile Feed Mill

LANCASTER, PA. — The Daffin Manufacturing Co. last week announced a nation-wide contest for feed dealers in which it will give an $18,000 Daffin mobile feed mill to the person who completes in 50 words or less the phrase: "I want a Daffin mobile feed mill because . . ."

The contest is open to any adult bona fide retail feed dealer or to one who expects to enter the business and can produce a franchise or agreement with a recognized feed manufacturer showing that he will be handling the manufacturer's line of feeds on or before Aug. 1, 1956. The contest closes June 15.

Judging to be done by nutritional scientists, livestock authorities and feed experts yet to be named will be only on the merit of contents, not on literacy or choice of words, Daffin officials pointed out in announcing the contest.

The main prize of the contest is the mobile feed mill which is to be mounted on a 2-ton truck chassis. The unit is powered by a 100 H.P. Diesel engine and includes a molasses blender.

In addition, the prize winner will receive for himself and his wife an airplane trip to Lancaster where the Daffin unit will be awarded late in July. The couple will be taken on a tour of the Amish-Mennonite farm country in Lancaster County and the winner will receive training in the operation of his new equipment.

Club Has Ladies' Night

DES MOINES—The Feb. 13 meeting of the Des Moines Feed & Grain Club marked the first ladies' night in the history of the club. The 30 ladies, among the 65 in attendance at the meeting, were presented with corsages. George Yates, photographic director of the Des Moines Register & Tribune, was the speaker.

HATCH

(Continued from page 7)

breeds for top weight marketing nor to limited marketing of light breed birds.

The heavy white breed appears to have become the flexible unit of production where the producer can take advantage of marketing opportunities between light weight or heavy weight units.

Period of Transition

The turkey industry appears to be in a period of transition where it is adopting new production and marketing techniques—a situation which demands interest from feed men.

Another point of major interest is the gains made and held by the chicken and turkey industries with the consumer, while the pork industry seems to have lost ground in recent years on the basis of consumer expenditures.

The broiler industry, on the basis of hatchery and chick placement data, continues to show signs of bursting its economic breeches. However, the broiler industry is not a stagnant industry.

Optimism in raising of chicks for flock replacement also is revealed in the data on that type of chicks.

Chick Production Data

Chick production by hatcheries during January was the largest on record for the month, according to USDA. The number of chicks produced totaled 149,886,000, compared with 111,137,000 last year.

Of the chicks hatched in January, 109,154,000 were for commercial broiler production and 40,732,000 were for other purposes. Broiler chick output was up 38%, while production for other purposes was up 26%.

USDA notes that demand for chicks for both broiler production and egg production has been strong compared with a year ago, and a relatively large batch was in prospect for February.

The number of eggs in incubators on Feb. 1 for broilers was 18% larger than a year earlier. Percentage changes from a year earlier by areas were: New England, up 7%; middle Atlantic, up 1%; east north central, up 20%; west north central, up 46%; south Atlantic, up 25%; east south central, up 36%; west south central, up 14%; mountain states up 11%; Pacific Coast, down 7%.

The number of eggs in incubators for non-broilers on Feb. 1 was 21% larger than a year ago. By areas, percentage changes were: New England, up 28%; middle Atlantic, up 30%; east north central, up 30%; west north central, up 28%; south Atlantic, up 11%; east south central, up 26%; west south central, up 33%; mountain states, no change; Pacific Coast, up 26%.

Turkey Poults

The number of heavy breed turkey poults hatched during January totaled 1,888,000, compared with 1,196,000 a year ago. Of the heavy breed poults hatched, 867,000 were of the heavy white breeds. The number of heavy breed eggs in incubators on Feb. 1 totaled 7,218,000, compared with 4,286,800 a year earlier. Of the heavy breed eggs in incubators, 1,887,000 were of the heavy white variety.

No comparisons are available with a year ago for heavy white breed poults hatched and eggs in incubators.

Light breed poults hatched during January totaled 886,000, compared with 1,323,000 in January last year. The number of light breed eggs in incubators on Feb. 1 totaled 1,171,000, compared with 1,887,000 last year.

MARKETS

(Continued from page 2)

unchanged, oats were down 2¢ and barley was off 1¢. Not much is being done in feed wheat because buyers are awaiting the opening of navigation.

Mill running time of formula feed manufacturers averaged about 40 hours last week, with one big mill up to 44 hours.

Light demand for millfeed coupled with continued curtailed flour output has put the market in a comfortable position, and prices continued to advance. Straight carlot sacked middlings are difficult to move because the market is thin. Heavy feeds are in tight supply, and shipments are behind schedules. Bran ended the week up $1; middlings advanced 50¢ @$1, and heavy feeds were unchanged to $1 higher.

Pacific Northwest

The market continued quiet, with most buyers trying to run out inventories, which have not liquidated as fast as had been anticipated, and also trying to puzzle out the soybean meal situation.

Soybean meal took one of the sharpest weekly drops it has had for some time, going down about $3 ton, and those buyers who are long, as well as resellers who own merchandise at higher levels, are endeavoring to figure out how to average their costs. As the soybean meal market has declined, buyers have been picking up old cars in an effort to average their costs down, and in spite of this, the market has continued to drop. Thus, they find that they are actually a bit long on inventories in the face of continuously declining markets, and this has tended to virtually put a stop to trading in any of the proteins during recent weeks.

Millfeed was easier on the basis of good production and no California buying interest, and about the only item which was moving in volume was hay. Another severe cold snap stimulated the hay market at the close of the week, and while supplies

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appear to be good, demand is also excellent. Most of the hay coming onto the market now is of Montana and Idaho origin.

Formula feeds prices worked down somewhat, and the market as a whole was without feature. The turkey poult and baby chick feed business has not started in earnest, and dairy feed volume is not running to concentrated feeds but to molasses mixtures of various kinds.

Ohio Valley

Warmer weather this week, together with a succession of light rains, cleared away the last of the winter snow and brought early spring flowers above ground, but the spring-like weather failed to arouse any formula feed buying urge. Instead, farmers are continuing to buy only needed minimum tonnages of feeds, obviously awaiting hoped-for improvement in prices for farm animals.

A Weather Bureau warning that the Ohio River might reach flood stage last week-end failed to materialize, and it is evident that ground conditions have been favorable for absorbing most of this week's rainfall, to raise the underground water level and further decrease the threat of an area drouth this summer.

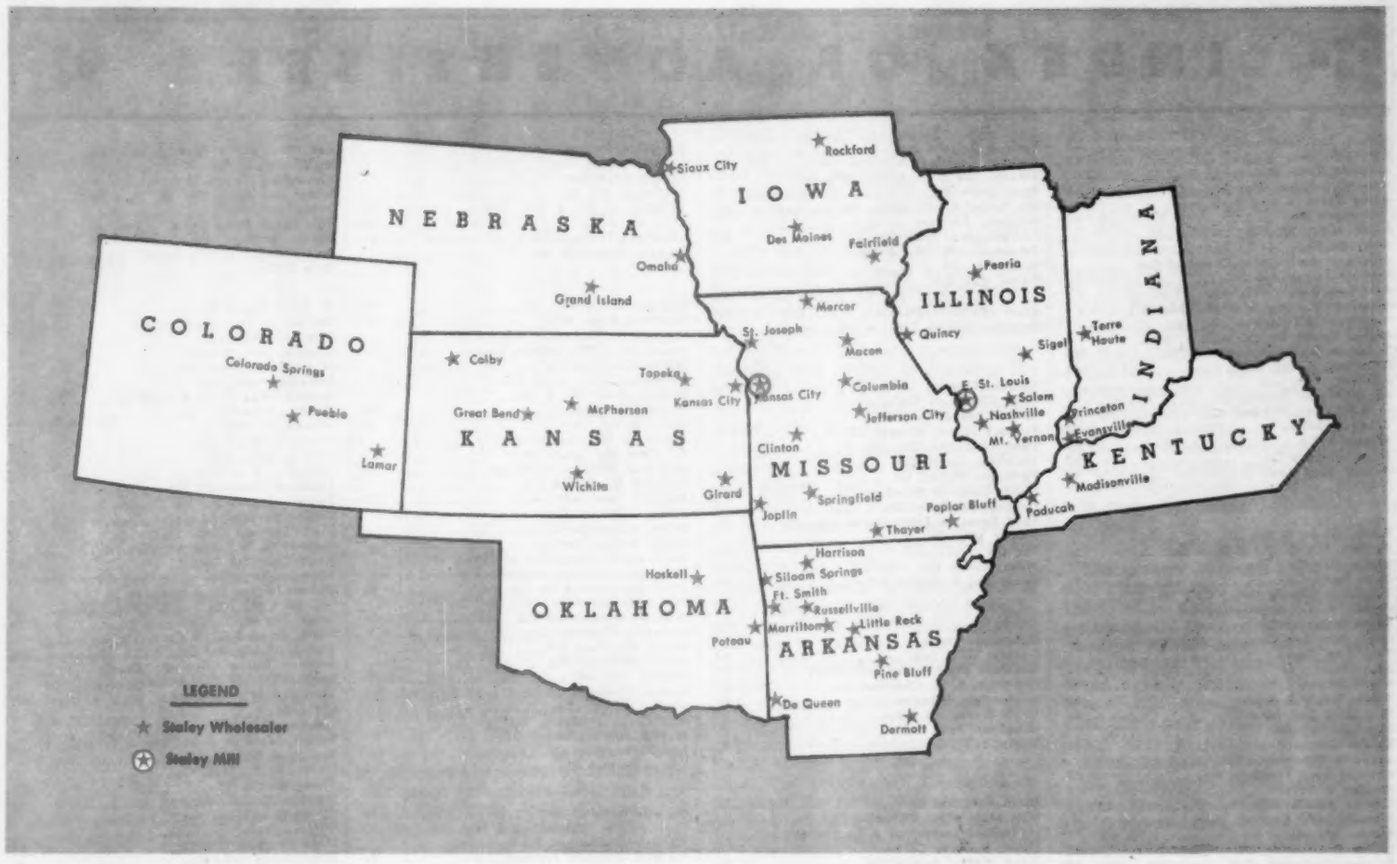
Although the minimum buying of most feeds continued this week, sales of broiler and hog feeds were relatively satisfactory. But this business was insufficient to effect any increase in mill operations, which are at a low average of 60% of capacities. Formula feed prices this week remained steady to off slightly.

Central States

The between-season lull in feed business continued to hold in the central states during the week ending Feb. 15, and how much longer it will last observers were hesitant to predict. Contributing factors are the muddy political waters which discourage long-range planning and the current low status of most livestock markets.

As long as the situation prevails, spokesmen say, the tendency will be to hold to the sidelines as much as possible. This applies to all segments of the industry. It is reflected in the buying attitude of feed manufacturers —they are keeping inventories low and maintaining a hand-to-mouth system of purchasing. Dealers, too, are inclined to let order balances dip until the atmosphere clears.

In the meantime, prices of ingredients mostly are on the easy side, as is true of formula feeds. In terms of several months ahead, however, the feeling is optimistic, for animal numbers are increasing to care for population increases, and will have to be fed.



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Staley products are shipped by railroad or truck to every state. For dealers in the midwest who want to secure their feeds by truck, you'll find it easy and convenient to handle Staley Feeds.

There's hardly a town or village in any of the states shown above that isn't within easy trucking distance of a Staley wholesaler. And many Staley wholesalers are located at stockyards, so that local livestock truckers offer economical back-hauls of Staley Feeds.

In most cases, the same wholesaler that supplies you with Staley Feeds also supplies salt, minerals, litter, and other allied items, as well as poultry and hog supplies and equipment for your convenience.

You'll also like the men who operate these Staley wholesale businesses. Prompt, friendly service is a matter of course with all personnel, from the owner or manager to the man who loads the truck.

Yes, it's easy to handle Staley Feeds—and profitable, too! Probably you already know the wholesale distributor of Staley Feeds in your area—why don't you stop in to see him on your next trip? Tell him *you* want to handle Staley Feeds, too! If you don't know who he is, write us at either of the addresses below.

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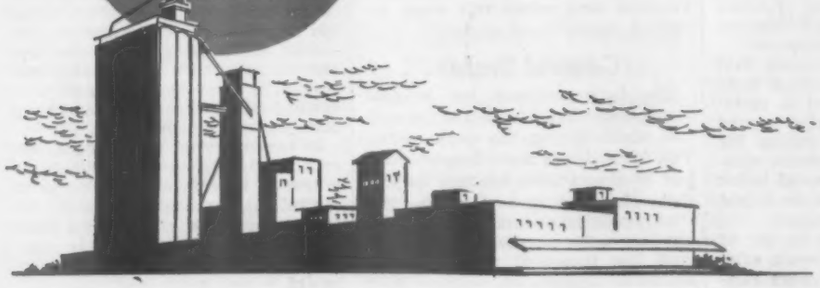

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